BETTER FARMING METHODS

FEBRUARY 1961
A WATT PUBLICATION
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Specialized Magazine for Agricultural ***CHANGE-AGENTS***

NFO ~ farmers' bargaining agent

WHAT AGRICULTURE UP AGAINST

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with the help of the County Agent and Beacon Advisor

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BETTER FARMING METHODS

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features

NFO — FARMERS' BARGAINING AGENT ..... p. 14

This interview with Oren Lee Staley, president of the National Farmers Organization, reveals that farmers in 12 Midwestern states are serious about establishing effective collective bargaining. NFO's plans for raising farm incomes revolves around a system of holding production off the market until an agreed-upon price level has been reached. These "holding actions" will be used to get firm contracts with buyers of farm products.

WHAT AGRICULTURE IS UP AGAINST ..... p. 22

Has all of agriculture's present predicament been of its own making? Absolutely not! There have been many forces outside agriculture that are responsible for the present situation. We must understand what these forces are before we can begin to choose between the many proposals now being offered to overcome the "farm problem". Proposals now being made are largely aimed at the surplus-overproduction aspects within agriculture. Outside forces, too, must be reckoned with if programs for curing the "farm problem" are to be successful.

HARVESTS OF INSANITY ..... p. 24

This article by Asher Brynes, former assistant to Secretary Benson, presents the city view of agricultural programs. It is presented as part of our continuing policy to present all viewpoints on agricultural topics.

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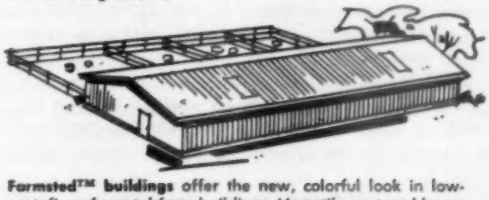

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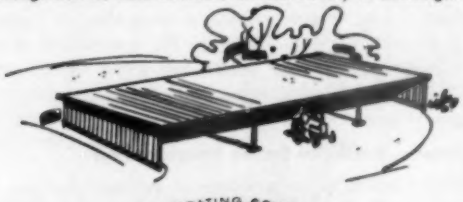

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KEEPING AHEAD

Two ears of corn grown in the same area at Firestone Homestead Farms near Columbiana, Ohio, present stark evidence of the extensive damage birds can inflict on a crop. The ear at the left is an experimental hybrid with a heavier, tighter husk than ordinary varieties. The other is an established variety with a loose tip which can easily be ripped open by a starling or a blackbird. A bird will peck away at the top of the ear and leave it exposed to the elements. Moisture then settles at the bottom of the husk and rots that portion.

Seaweed Promotes Plant Growth

Seaweed continues to give encouraging results in research conducted by the Horticulture Department at Clemson College.

Seaweed, sometimes called kelp meal, has been found to stimulate the growth of plants in such a way that it improves the quality of the product. However, the "what and why" factors in seaweed that produce this phenomenal growth and improved quality are still a mystery.

Field tests were conducted with sweet corn, okra, tomatoes, sesame, peas, beans, sweet peppers, soybeans, and melons. Seaweed meal was applied broadcast at the rate of 250 and 500 pounds per acre prior to planting. Significant increases in yields were seen for tomatoes, sweet peppers, and sweet corn at the 250 and 500 pound rates. Peas, beans, and okra yields were only slightly higher than the check plants at the 500 pounds rate of application.

Grinding High-Moisture Corn Pays

University of Illinois dairy research shows that it pays to grind high-moisture corn for dairy heifers and cows.

In recent tests grinding boosted heifer gains on high-moisture shelled corn by about 22 percent. And the ground high-moisture corn was better than whole-kernel dry corn for maintaining milk production.

University of Illinois dairy scientists say these tests disprove the theory that farmers don't have to grind high-moisture corn because it is soft and therefore naturally easier to digest than regular dry corn.

Copper Compounds Boost Gains of Pigs

Copper sulphate in the rations of baby pigs from two to eight weeks of age increased the pigs' daily gains 19 percent and feed efficiency more than 6 percent over gains and feed efficiency in pigs not receiving the copper sulphate in Iowa State University experiments.

The copper sulphate was fed at the rate of 250 parts per million of copper in the total ration. Copper oxide fed at the same rate also improved gains and feed efficiency to nearly the same extent as the copper sulphate.

Range Testing Now Easier and Quicker

A new method for testing range cattle is resulting in major savings to beef producers in their efforts to eradicate brucellosis.

The method, developed as a part of the state-federal cooperative brucellosis eradication program, is based on use of a screening-type blood test of market cattle on the way to or during slaughter. The primary advantage of the program is that testing of range herds will no longer be necessary, following certification, in order to determine their brucellosis-free status. Thus, almost all of the blood testing of cattle at the ranches can be eliminated.

Plant Breeders Creating High-Energy Corn

University of Illinois corn breeders are juggling genes and chromosomes to make corn into a high-energy feed. And so far they have been able to increase the oil content by 50 percent without reducing yields.

Oil is two and one-fourth times as high in energy as starch is. A high-energy feed can mean more weight produced from each bushel of corn. In the near future high-energy corn could be speeding feeder livestock to market without raising feed costs.

Illinois 6021 and 6052 were the first high-oil hybrids grown by farmers on a limited scale in 1959. The Illinois oil hybrids average about 6.3 percent oil compared with about 4.7 percent for a standard hybrid. Theoretically, this means that present oil hybrids yield about 5.6 percent more energy per acre than standard corn.

Coming Soon — Artificial Swine Insemination

A practical solution to the problems of artificial insemination in swine is being hastened by research which will enable the farmer to bring all or part of his swine breeding herd into heat within a one to two-day period.

This is already being accomplished experimentally very simply by feeding a ration containing a hormone for a short period to the breeding sows or gilts. Approximately 90 percent of the females then come into heat within four to six days after removal of the hormonal feed.

IN AGRICULTURE

- **Plant Breeders Create Corn With 50 Percent More Oil**
- **May Soon Be Able To Bring All Sows Into Heat During Two-Day Period**
- **New Method For Range-Testing Cattle Brings Savings To Cattlemen**
- **Plowing Under Heavy Corn Residues Can Cut Crop Yields**
- **Seaweed Found To Stimulate Growth And Improve Quality Of Plants**

Continuous Corn Yield Equals Rotation

Experiments in Iowa show that continuous corn yields can be maintained as high as corn yields in a meadow rotation if adequate fertilizer is provided.

Experimental work conducted on Edina silt loam between 1952 and 1957 showed that both continuous corn and meadow rotation treatments increased organic matter content of the soil when adequately fertilized. Continuous corn requires careful insect and disease control. To get effective results soil insecticides and cheap sources of nitrogen must be used.

One Feeder Space for Each Six Pigs

One feeder space for every six pigs appeared to be adequate in experiments conducted at South Dakota State College.

Two experiments showed that one feeder space per six pigs is probably adequate, and that a slight difference in feeder space requirements was observed between the winter and summer trials. If a difference exists, the results indicate that winter feeding may require more feeder space.

Heavy Corn Residue Can Cut Crop Yields

Plowing under heavy residue from corn can reduce the yield of succeeding crops of oats or other nonlegumes, say Iowa State University scientists.

Experiments have shown that the residue of corn tied up nitrogen during its decomposition. This nitrogen tie-up resulted in severe nitrogen deficiencies in the oat plants when little or no nitrogen fertilizer was applied. However, the researchers said that application of 75 pounds of nitrogen in the form of urea or ammonium nitrate virtually erased this deficiency.

Drugs No Help For Transit Shrink

Injecting a tranquilizer into beef animals just prior to shipment to reduce transit shrink was not particularly effective, in four tests at the University of Kentucky.

Pounds lost in transit, overnight, and from the time the steers were injected until they were slaughtered, slightly favored the control (no tranquilizer) groups in three of the tests for a three-hour haul. In the test where the cattle were hauled for seven or eight hours, shrink was in favor of the tranquilized group.

Dwarf Corn Challenges Regular Corn

Dwarf corn silage is making a strong bid to replace regular corn silage as the farmer's best source of important roughage nutrients.

University of Illinois dairy scientists say dwarf corn was easier to chop than regular corn in tests this fall. And the pint-sized corn yielded nearly as much silage and dry matter per acre.

Researchers believe the per acre yield of total digestible nutrients from dwarf corn may equal that from regular corn even though total green matter yields are less.

That's because analysis of the dwarf corn plants shows a 5 percent higher proportion of ears to the rest of the plant. And it shows 5 percent less stalk.

How to Place Corn Fertilizer

How fertilizer is placed for your corn crop can have a lot to do with yields — especially in seasons of inadequate rainfall.

Research at VPI Agricultural Experiment Station has shown that fertilizer injury to corn germination is closely related to soil moisture. If the moisture supply is adequate throughout the growing season, reasonably heavy rates of fertilizer near the seed will reduce yields very little. However, where heavy rates of fertilizer are to be applied it is better to play it safe by broadcasting most of it, and putting only a small amount in the row.

Corn Topping A Waste of Time

Cutting off the tassel and the top four or five leaves of corn will seldom hasten the rate of field drying.

In Iowa State University experiments almost all trials showed no difference between topped and untopped corn in the rate of field drying of the kernels. Topping corn generally reduced yields. Yield reductions as much as 11 bushels per acre were noted in corn topped 10 days after pollination.

WASHINGTON NEWS

by Jay Richter

There's new hope that all the major farm organizations may get together and support some kind of land retirement program. Farm organization men are apparently ready to make great efforts for a president who meets them face-to-face.

Kennedy Meets Farm Leaders

The Kennedy administration's pre-inauguration meeting which brought the president-elect face-to-face with the nation's top farm leaders produced a lot of talk about a new spirit of harmony—and some hope that all the major farm organizations could be persuaded to accept some type of new land retirement legislation.

Farm organization officials who attended the first meeting came away impressed with two things: One, what many of them described as an apparent eagerness on the part of the Farm Bureau Federation to find more common ground with other organizations: Two, Kennedy's willingness to take a personal hand in working on the farm problem.

"That's something we haven't seen before," said one participant in the meeting, speaking of Kennedy's personal attendance. "It augurs well for agriculture."

Insiders say that the new administration still intends to go ahead with administrative action to raise farm income, whether or not there's unanimous backing for some of the likely steps among the farm organizations.

This series of meetings with farm organization officials, launched by a "summit" conference January 5 attended by both Kennedy and Freeman, guaranteed that all major farm interests would get their views on line with the new administration before the announcement of any important new steps.

One move which appeared certain was an early expansion of government food donations to the needy, foreshadowed by announcement that this step had been recommended by Kennedy's committee on aid to depressed areas.

Another lively possibility at press-time was an order from the incoming White House crew for an all-embracing study of needs for U. S. food and fiber both at home and abroad. Such a study, if it's approved, would probably not delay the widely-predicted Kennedy moves to propose a new wheat bill this year and to make some attempt to curb feed surpluses, but it would furnish a basis for future farm program planning.

Extension Still Growing?

More than 13 million Americans took part in the educational programs of the Federal-State Cooperative Extension Service in 1960.

And early in 1961 one of the nation's major farm organizations was asking itself some searching questions about the scope of these services.

There was no question about the National Grange's solid backing for Extension programs in rural areas. But Grange Master Herschel Newsom wrote in his organization's magazine that the Grange would be studying the question of how far the Agriculture Department should support these services for urban areas. It may be, Newsom said, that the Grange will come to **feel that local and state governments should take responsibility for Extension-type service in urban and suburban areas.**

The Agriculture Department says the number of people served by Extension nationwide last year was an all-time high. Demands by nonfarm families for help in gardening, landscaping, consumer buying and related subjects continue to grow, USDA says.

Farmers Least Protected

If the Kennedy administration puts across its plan to tie medical care for the aged to the social security program, many farm families will be included in the new program's coverage.

But farmers as a group will still be the least-protected section of the population against the costs of hospitalization and major illness.

A recent survey by the Public Health Service showed that about two-thirds of the civilian population had some form of voluntary health insurance during the last half of 1959. But the coverage was heaviest in urban areas and middle-upper income brackets, lowest in rural areas and lower income brackets.

"Stop singing sad music, Jasper. The mare is getting the field all muddy."

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FARM TRENDS

A quick summary of developments in agriculture

INCREASING PRODUCTION dominates the livestock industry in 1961. Cattle numbers are expected to increase, but at a slower rate than during the past three years. This prediction from the National Meat Promotion Committee also foretells continued expansion for another two or three years.

AGRICULTURE'S SHARE of imports continues to decline. From 1945-49, agricultural imports were 44 percent of $5.4 billion in total imports. In 1955-59, agricultural imports were down to 31 percent of total imports. In 1960 this figure fell to 26 percent.

LATEST CENSUS FIGURES show that there are 1,200 farm units in this country that sell more farm products than the one and a half million farms at the bottom of the scale. Each of these 1,200 units sells more than half a million dollars worth of farm products each year.

U. S. FARMERS are the world's largest exporters of farm products. In 1960, U. S. farmers supplied 17 percent of the world's agricultural export volume. The output of 57 million acres (1 acre of every 6 of harvest cropland) moved abroad. Quantity of exports was a record with export value just under the record $4.7 billion record of 1957.

AMERICA'S CONSUMERS spent 20 percent of their disposable income for food in 1959. If they had bought the same kinds and quantities of foods they ate in 1935-39 they would have spent only 15 percent of their 1959 income. Farmers receive 38 cents of each dollar spent for food.

FARM BUSINESS CONDITIONS

Farm income up

Employment down

Parity ratio up

Marketings down

Farm Deposits down

ITEMS	Nov. 1960	Oct. 1960	Nov. 1959
PRICES:			
Received by farmers (1947-49 = 100)	89	89	85
Paid by farmers (1947-49 = 100)	119	119	118
Parity price ratio (1910-14 = 100)	81	81	78
Wholesale, all commodities (1947-49 = 100)	120	120	119
Paid by consumers (1947-49 = 100)	127	127	126
LABOR:			
Farm labor, U.S. (dol. per week without board)	—	43.75	42.00[2]
Factory labor, U.S. (dol. earned per week)	90.78	91.08	88.98
PRODUCTION:			
Industrial, physical volume (1947-49 = 100)	159	162	156
Farm marketings, physical volume (1947-49 = 100)	171	189	175
INCOME PAYMENTS:			
Total personal income, U.S. (annual rate, bil. of dol.)	410	410	389
Cash farm income, U.S. [1](annual rate, bil. of dol.)	—	36	35
EMPLOYMENT:			
Farm (millions)	5.7	6.3	5.6
Nonagricultural (millions)	61.5	61.2	60.0
FINANCIAL (District member banks):			
Demand deposits:			
Agricultural banks (1955 monthly avg. = 100)	104.4	104.4	104.8
Nonagricultural banks (1955 monthly avg. = 100)	104.6	104.7	104.9
Time deposits:			
Agricultural banks (1955 monthly avg. = 100)	136.8	135.9	130.2
Nonagricultural banks (1955 monthly avg. = 100)	133.6	133.3	125.1

[2]October

[1]Based on estimated monthly income.

Compiled from official sources by the Research Department, Federal Reserve Bank of Chicago

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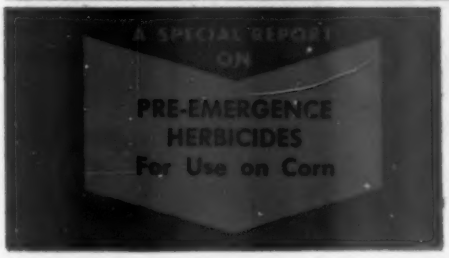

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WEED CONTROL IN MIDWESTERN CORN CROPS

By F. W. Slife

Heavy rainfall shortly after corn is planted can delay cultivation until weeds are established and have consumed fertilizer elements needed by corn to produce maximum yields.

Weeds in corn fields represent one of the many factors which affect our corn yields. On some farms they may be the most important factor, while on others they may not be any more important than insects, low soil fertility or other factors that limit corn yields. With many new control measures now available, weeds can hardly be overlooked by the farmer who is trying for top corn yields.

Cultural Practices Affect Weeds in Corn Fields

The two most important cultural practices affecting weeds in corn fields are the time of planting and the method of cultivation. Several studies have shown that late-planted corn is usually less weedy than early-planted fields. That is true because early corn planting comes at the same time that weeds are germinating while delayed planting lets many of the weed seeds germinate before planting so they are destroyed by seed bed preparation.

At one time, most of the corn in the Corn Belt was planted in hills so that it could be cross cultivated. Recent figures indicate that in some cornbelt states 90% is now hill dropped or drilled. There is no question of the convenience of hill dropping and drilling compared to planting corn in hills but for this convenience we have increased the opportunity for weeds to grow in the corn row.

"... costing farmers millions of dollars in reduced corn yields"

There is little likelihood that we will return to delayed planting and cross cultivation to control weeds in corn. With the high cost of labor on farms, plus the labor shortage, the farmer must plant and cultivate corn when it fits his schedule. In fact, since we generally plant early unless rains interfere, and since we are hill dropping and drilling such a high percentage of our corn, the use of chemicals to control weeds should greatly increase and become one of the standard practices in growing corn.

How Much Do Weeds Reduce Corn Yields?

There is no simple answer to this question. It will depend upon the type of weed, the amount of the infestation, and the growing season. Large, tall-growing weeds that severely compete with corn for light in addition to moisture and nutrients are undoubtedly more severe than the low-growing species. Recent data from the Illinois Agricultural Experiment Station on the effect of varying infestations of giant foxtail is presented in table 1:

TABLE 1 The effect of various stands of giant foxtail on the yield of corn (3-year average)

Foxtail stand in the corn row	Corn yields
4-inch band	70.7
1 plant every inch	77.8
1 plant every 2 inches	82.0
1 plant every 4 inches	84.8
1 plant every 12 inches	88.4
1 plant every 24 inches	90.6
No foxtail	93.5

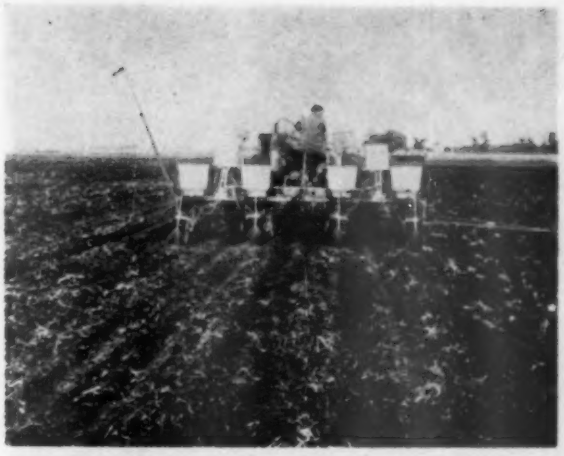
It is important to remember that the varying stands of giant foxtail referred to in Table 1 are growing in the corn row and not between the rows. The area between the rows was clean cultivated with mechanical equipment. These figures indicate how serious the residual stand of weeds can be after normal cultivation. In seriously infested fields, yield reductions can be as much as 25% of the potential yields. Since giant foxtail now infests several million acres of corn land in the Corn Belt and is spreading at a rapid rate, this one weed alone is costing farmers millions of dollars in reduced corn yields.

Herbicides for Corn

There are a number of good herbicides for weed control in corn. The decision on which one to use should not be based on the sales pitch of a good salesman but on the kind of weed problem present. A serious weed problem does not appear in one year but is a result of many years' weed seeds falling on the soil. The farmer should know whether the problem is grass or broadleaf weeds or a combination of both. If the problem is only broadleaf weeds, then there is little or no need to use pre-emergence herbicides. Used as a post-emergence spray, 2,4-D has been highly effective against the common broadleaf weeds found in corn fields. To be most effective, 2,4-D should be used when the broadleaf weeds are small. The larger broadleaf weeds are more difficult to kill. One of the best practices to follow is to spray weeds as soon as it is seen that cultivation is not going to control the weeds.

Although the use of 2,4-D in corn fields has become a standard practice in many areas, it is not without its difficulties. Each year some corn fields are injured from either an overdosage of 2,4-D or improper application. With the increased use of 2,4-D more and more injury has resulted to nearby susceptible crops. In a few corn-belt states, this has resulted in legislation restricting the use of 2,4-D and, if the damage continues, it can only result in more legislation against the use of 2,4-D.

Only the amine formulations should be used in areas where sensitive crops are grown, and even these should not be used in fields adjacent to sensitive crops. Although 2,4-D is the best chemical to use for broadleaf weeds in corn, pre-emergence chemicals would be jus-



Pre-emergence sprays may be applied over the row when corn is planted. This saves a second operation over the field, lowers equipment costs and reduces soil compaction.

A broadcast treatment of either Atrazine or Simazine applied shortly after the corn is planted protects the crop from weed competition through to harvest.

tified in fields adjacent to sensitive crops, even though the problem is only broadleaf weeds.

Pre-emergence Sprays

Within the last five years, pre-emergence sprays for weed control in corn have become very popular. In total acreage treated, pre-emergence sprays do not compare to 2,4-D post-emergence sprays but the treated acreage is increasing rapidly.

There are many reasons why pre-emergence weed control is attractive but the major reason is that grass weeds in corn are becoming the predominant problem in many areas. Since 2,4-D as a post-emergence spray will not control grass, pre-emergence sprays are the only answer. The extensive use of 2,4-D to spray broadleaf weeds has undoubtedly let the grass weeds increase. Pre-emergence sprays are applied at planting time, usually with a sprayer or granular applicator on the planter. This saves one trip over the field as compared to post-emergence sprays.

Unfortunately, pre-emergence sprays do not work as consistently as post-emergence sprays. Since they are applied to the soil surface immediately after planting, they fail if rain does not come soon enough to wash them into the soil. If no rain falls within 2 or 2½ weeks after pre-emergence applications, the treatment usually fails but, under these conditions, weeds are not nearly as serious as if rain had fallen after application. Pre-emergence treatments also vary in the degree of control because of the variation in soil texture. For example, some materials do not work as well in sandy soils as they do in the heavy clay soils high in organic matter.

In spite of the fact that pre-emergence compounds occasionally fail and sometimes work differently in different soils, they are highly recommended for grass control in corn and can usually be expected to work at least three out of four years.

The three most widely used pre-emergence treatments for corn are: 2,4-D, Atrazine, and Randox. Each of these have different characteristics and the intended user should be familiar with these before a choice of material is made.

2,4-D

The early herbicide, 2,4-D, has been used widely as a pre-emergence treatment. It is the cheapest in cost, easy to handle, and widely available. Unfortunately, germinating corn does not have a high degree of tolerance to 2,4-D and when sufficient rain occurs to move the chemical down into the corn-germinating level, some injury occurs. Under average rainfall conditions, the injury is not a major factor but in years such as 1960, when heavy rain falls, injury is more widespread and serious stand reductions can occur.

In addition to the injury factor, 2,4-D does not control grass as well as it does broadleaf weeds. Rains within a few days to one week after application will frequently control grass weeds but if rain delays longer than this, germinating grass weeds will not be affected. Germinating broadleaf weeds are controlled very well by 2,4-D but this is not the primary purpose for using a pre-emergence chemical in corn.

Both Atrazine and Randox control grass weeds better in corn than 2,4-D and, in addition, corn is highly tolerant to both compounds. For these reasons, it seems logical that 2,4-D pre-emergence will be of less importance in the future in corn fields than it has been in the past.

Atrazine is a new compound in the pre-emergence

field but, on the basis of the results for the past two years, it will be one of the most important. It controls both grasses and broadleaves and corn is highly tolerant to it. Its long soil residue provides weed control all season long but prevents the seeding of winter grains the same season. Atrazine is only slightly soluble in water and, therefore, requires a good rain for it to work. Its performance is not destroyed, however, by heavy rains of two or more inches and, under these conditions, it is the best pre-emergence material for corn.

Randox has been available for grass control in corn since 1956. It does not control broadleaf weeds. It is extremely irritating to handle and adequate precautions should be taken in handling the material, such as wearing goggles and rubber gloves. Since it is more soluble than Atrazine, it requires less rainfall to make it work but, under heavy rainfall conditions, it may be diluted to the extent that weed control is not perfect. Randox should not be used in sandy soils, since it is leached too easily in these soils.

Granulars or Sprays

Pre-emergence chemicals seem to perform about the same whether they are applied as sprays or in the granular form. This is true if granulars are applied evenly so that a good pattern is achieved. Since granular applicators are relatively new, a considerable amount of adjustment has been made and more is anticipated. It will probably take several years before the "bugs" are completely gone. Granular chemicals cost more per acre but may be more convenient for some people because no water is required. Farmers with spray equipment should not necessarily discard it for granulars but, more logically, should wait until the applicators are standardized and more information is available about the performance of pre-emergence chemicals in the granular form.

Motion Picture Available

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When weeds within the corn row are controlled with Atrazine or Simazine applied as a band treatment at planting time, the early cultivation formerly required can be eliminated.

Band vs. Broadcast Spraying

Both Atrazine and Randox are usually applied as a band over the row because the cost of chemicals is reduced to about ⅓ of a broadcast application. Since 2,4-D is cheap, it can be broadcast. If Atrazine and Randox become cheaper, would it be better to broadcast these or continue to band them? There is no simple answer to this question. Broadcast applications have the advantage of eliminating from one to all the cultivations, while banding the chemical usually delays the first cultivation or may eliminate it. Many of our corn-belt soils will need some cultivation during the growing season for aeration. The need may vary with the year and with the rainfall pattern. Heavy rains after planting often seal the soil to such an extent that cultivating is necessary for aeration as well as to roughen the surface so that subsequent rains will not run off and be lost.

In many soils, then, band application serves several purposes. Besides cutting the cost of the chemical, it allows cultivation for aeration and provides a rough surface to catch more water.

Try Pre-Emergence Chemicals

In fields where weeds cannot be controlled by cultural practices or post-emergence application of 2,4-D, try pre-emergence chemicals. Follow directions carefully and treat only the fields where the weed problem has been severe in years previous. You may want to start on the end rows which always seem to have more weeds than the rest of the field. Consult with your vocational agricultural teacher, farm advisor or state experiment station on the type of chemical to best suit your needs.

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"What Farm Leaders Are Saying..."

C. R. Arnold, former governor of the Farm Credit Administration, told a group of Ohio fertilizer dealers recently, "We have had creeping inflation for the last 25 years. It breeds high costs of living, more installment buying, higher taxes . . . Extreme inflation ends in dictatorship or civil war . . . I hope that inflation has been halted. If we start off on another inflationary spiral, we shall never stop it without disastrous results."

• • •

A Cornell University social scientist, **Professor Robert A. Polson,** has outlined a broad new role for University extension workers which includes improving people's judgement as well as giving out facts. Polson called for fewer "pat answers" from county agents and for more counseling with individuals and groups. He said this means helping farm families adjust to basic economic and social changes brought on by the growing size of farms, the decrease in the number of farms, the drop in the number of farmers, and the effects these changes have on maintaining community services.

• • •

Dr. Jean Paul Mather, former president of the University of Massachusetts, speaker at the 74th annual convention of the American Association of Land-Grant Colleges and State Universities, said, "In view of the many improvements in communication techniques, there are 'too many people' in agricultural extension and I urge each land-grant college president, as he is faced with increases in the ratio of students to teachers in the years ahead, to have the courage to reduce extension staff as parallel policy as long as he hires the best possible people in extension communications and backs his deans and directors in the use of the best modern technical equipment and methods."

Harold E. Ford, executive secretary of the Southeastern Poultry and Egg Association, asked members of the Egg Industry Conference recently, "Would it not be wise for you to have a central clearing through which your surplus eggs moving into New York, or any other consuming area, could be so scheduled that they would not break the market." He continued, "Your industry must establish new outlets for its production if you plan to expand. We are only kidding ourselves when we say that 'other areas are being forced out', and that there will be a vacuum created that will absorb our increased production. So, it becomes necessary for you to create new markets, develop local outlets, and move your eggs to market in an orderly manner."

• • •

Purdue University Dean of Agriculture **Earl L. Butz** declares, "Entirely too many people in this country think of agriculture as a declining industry. American agriculture is an expanding industry in every important respect except one — the number of people required to run our farms. We don't think of air transportation as a declining industry just because a pilot in a jet airliner can now take 100 passengers from coast to coast in half a day, as compared with 20 passengers in a day and a half two decades ago. This, like agriculture, is a strong and growing industry.

• • •

Albert E. Forster, president and board chairman of Hercules Powder Company, believes, "The science of agriculture has far outrun its practitioners, and an aggressive program of farm education is vital to future developments in many areas of the world.

"If all the knowledge and materials for scientific pest control now on hand were used to maximum advantage, crop production could be increased 50 percent."

• • •

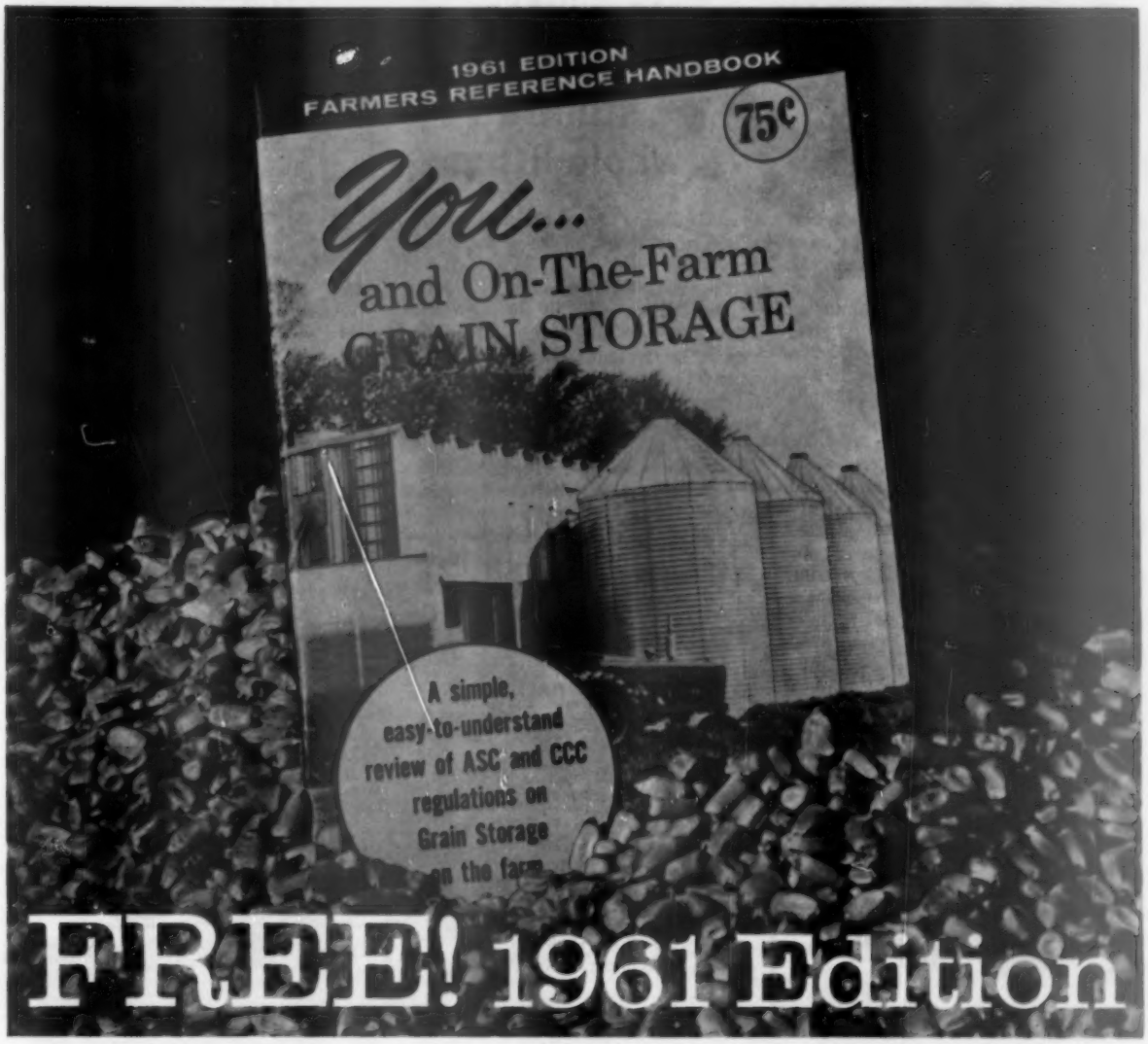
Mr. G. B. Gunlogson, a prominent engineer and farmer, told members of the American Society of Agriculture Engineers, " . . . Much of science in agriculture, as for example, the work of the biologist and chemist, is primarily production oriented. But now we have entered an era when production is no longer a pressing problem. Rather the problem lies in translating this growing production potential into human gains — for farm people and the public.

• • •

Lauren K. Soth of the *Des Moines Register* noted recently, "In the next 10 years, instead of seeking a single solution to bring about prosperity in agriculture, we should work on several fronts. We ought to work toward accomplishing restraint of total output of around 6 to 8 percent below the normal trend increase by 1970. The bulk of this reduction must come in the grains which are the foundation for much of American agriculture. It is in the grains, also, where our surplus problem is most severe.

• • •

D. W. Brooks, general manager, Cotton Producers Association, Atlanta, Georgia, had this to say to members of the Northeastern Poultry Cooperative Association, "The bigger you get, the easier it is to live and grow. We have found that it is a lot less competitive at the top than it is down near the bottom. Margins get wider, savings get bigger, and there is more money for research to develop new products and new outlets. If you have made a good start, don't get discouraged, keep going, and things will get easier.



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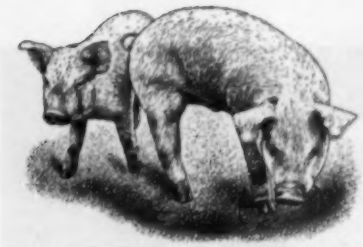

In winter, anemia can stunt a whole litter

Every successful hog raiser is always on the lookout for ways to make a few more dollars per litter. He knows, for example, that pigs farrowed during the winter months are cut off from pasture and may be anemic and stunted unless he gives them some form of iron for healthy growth. The point is particularly important right now, with winter approaching and 4% more pigs expected.

But iron preparations are not all alike. Sometimes only 40 to 50 per cent of an iron product given to protect against anemia is absorbed into the blood—or the product may be excreted so fast that the pig never gets a chance to use the iron at all. At Michigan State University, a study was carried out to evaluate a number of iron products used to safeguard pigs against anemia. It was found that Armidexan 75 was the *most effective* of the ten different injectable iron products tested.*

It's the *rapid absorption* of Armidexan 75 that largely explains its superiority over other injectable forms. It can be injected straight into muscle and is completely absorbed in 2 days. No staining, no damage. One shot is enough to keep pigs' blood iron-rich, enough to see them through the critical suckling period, enough to avoid anemia-stunted litters and get better pigs to market faster and cheaper.

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*For a copy of the complete report, write to ANIMAL HEALTH DEPARTMENT KANKAKEE, ILLINOIS

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COMING EVENTS

February 17-18 — 23rd Annual National Farm Institute, Hotel Fort Des Moines, Des Moines Iowa. Contact Agricultural Committee, Greater Des Moines Chamber of Commerce, Des Moines, Iowa.

March 3-4 — Second Annual All America Market Hog Show, Lamar, Colorado. Contact All America Market Hog Show, Box 310, Lamar, Colorado.

April 12-14 — 26th Annual Chemurgic Conference, Sheraton-Gibson Hotel, Cincinnati, Ohio. Contact The Chemurgic Council, 350 Fifth Avenue, New York 1, New York.

April 17-19 — 8th National Watershed Congress, Ramada Inn, Tucson, Arizona. Contact C. R. Gutermuth, Vice President, Wildlife Management Institute, 709 Wire Building, Washington 5, D. C.

April 24-26 — 21st Annual Meeting of the Animal Health Institute, Mayflower Hotel, Washington, D. C. Contact D. L. Bruner, Executive Secretary, Animal Health Institute, 512 Shops Building, Des Moines, Iowa.

June 21-24 — Livestock Marketing Congress, Sheraton-Dallas Hotel, Dallas, Texas. Contact Livestock Marketing Congress, 802 VFW Building, Broadway at 34th, Kansas City, Missouri.

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Shown above is a portion of the soybean section of Nitragin's test plots. Recording data are Richard Curley, company agronomist, and Dr. J. C. Burton, Nitragin's Director of Research, widely recognized authority on inoculant bacteria.

Most inoculant producer's tests are incomplete — they rely only on lab or greenhouse tests. However, our experience proves that new inoculant ideas that work in the lab or greenhouse often FAIL in the field. So, we refuse to stop short in our research — we use laboratory and greenhouse tests PLUS thorough and complete field tests. Furthermore, we use the accepted and prevailing procedures of research in the field of bacteriology. We don't cut corners or lower standards in an effort to justify inferior products or processes.

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BUT . . . no matter how well a ration is formulated, unless animals are in top physical condition they cannot utilize their feed to full advantage. That's why successful farm feeders, as well as commercial feedlot operators, maintain a program of herd health to prevent the ailments that can cut into NET profit and keep them from making top dollar at market time.

DYNAFAC CUTS FEEDLOT BLOAT AND SCOURS

In many parts of the country, feeders are switching to the use of low-roughage, high-energy rations from start to finish during the feeding period. Unfortunately, the use of such rations frequently causes bloat, founder, scours...and lost profits!

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The addition of DYNAFAC to high-energy rations effectively reduces the incidence of bloat. The first "chemobiotic" developed for beef-cattle rations, DYNAFAC helps keep cattle on feed, aids in increasing growth and feed conversion, and can help produce lighter-weight cattle faster . . . the kind that produce more desirable, nonwasty primal cuts. DYNAFAC is a feed additive you can't afford to pass up! It works well with corn, barley or milo-based rations and can return as much as one dollar for every dime invested!

Recommended use levels: For feeder cattle—1.5 to 2 grams per head per day. For beef calves—.9 to 1 gram per head per day . . . a cost of less than 1c per day!

YOU INCREASE BEEF-CATTLE PROFITS

Vitamin A deficiency is but one of these profit-robbing conditions. And feedlot bloat and scouring . . . especially when cattle are on high-energy rations . . . can result in less-than-maximum weight gains and feed efficiency.

To improve your feeding program and to help maintain herds in good health, Merck now offers three products: DYNAFAC . . . STABIMIX A . . . and AGROZYME. Read about them here. Then, for further information, or to place your order, contact your feed supplier or Merck Feed Products Representative.

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Feedlot rations, which do not contain newly-harvested top-quality grains, can lose much of their vitamin A content before reaching the feed bunks. This lack of vitamin A can weaken stockers' and feeders' resistance to pinkeye, respiratory infections and diarrhea. What's more, animals grazing on poor range or pasture . . . especially during dry spells . . . may also suffer from A-avitaminosis. Cows on vitamin A-deficient rations may abort or drop premature, blind or weak calves.

Losses due to vitamin A deficiency can be prevented! Remove doubts about the vitamin A content or availability of the feedstuffs you use. Give cattle full benefit of all the vitamin A they need by using STABIMIX A! It is economical to use and stable under all conditions.

Recommended use levels: For cattle of all ages—1,000-2,000 units per 100 pounds of body weight daily. For cows during last 2 months of gestation and first 3 months of lactation – 15,000-20,000 units per cow per day.

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Growth responses stimulated by AGROZYME have been recorded as high as 24% . . . feed savings as great as 12% . . . and extra profits as high as $10.60 per finished steer! Profit-building results like these have been substantiated in experiment stations and commercial feed lots across the country.

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Recommended use level: .0075 pounds per head per day.

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NFO — FARMER'S BARGAINING AGENT

This interview with Oren Lee Staley, president of the National Farmers Organization, reveals that farmers in 12 midwestern states are serious about establishing effective collective bargaining. NFO's plans for raising farm incomes revolves around a system of holding production off the market until an agreed-upon price level has been reached. Although many doubt these "holding actions" will really work, Staley explains how his organization is planning to make them work.

Mr. Staley, what is the NFO?

The National Farmers Organization (NFO) with headquarters at Corning, Iowa, is an organization of farmers to bargain collectively for the sale of all farm products.

Farmers joining NFO sign a three-year membership agreement which authorizes the NFO to be their bargaining agent. However, farmers are free to market as they choose until such time as a contract is consummated with processors by a two-third's vote of approval by the farmers affected.

Only farm producers can become members of the NFO. The NFO cannot engage in business; it is only a service organization working to get a price at the marketplace for its members.

What is the purpose of the NFO?

The purpose of the NFO is to raise the standard of living of the American farmers to the level of the other segments of the nation's economy. The goal of the NFO is the cost of production plus a reasonable profit for the American family-type farmers.

What does the NFO feel is the main problem facing the American family-type farmers?

Their inability to have anything to say about the prices they receive for their products. The American farmers go to the marketplace and say, "What will you give me?" And as long as they are willing to accept this method of selling their products, everyone else will be willing to let them continue this practice.

What is the first step the American farmers must take to correct this?

They must gain control of the sale of their production and be able to demand justice at the marketplace.

How will this be accomplished?

It will be accomplished through the NFO program of collective bargaining.

First, the farmers must pool their production in sufficient quantity so that the present marketing system cannot meet its requirements without the production represented by NFO members.

Secondly, farmers must realize they must use their bargaining power and that they lose their bargaining power when their products leave the farm. Therefore, they must price their products on the farm and hold for those prices. Thus, the reason for holding actions.

Thirdly, when the present marketing system cannot meet their needs they must bargain with the NFO and at this point agreements will be signed (when approved by a two-third's vote of approval of members affected) to stabilize prices and marketing conditions in the future.

Collective bargaining has never failed for any group that has used it and it will not fail for the American farmers. All they have to do is to use their bargaining power and they will solve many of their problems in a very short time.

You mention holding actions. What are holding actions?

Holding actions are farmers determining a price for their products and holding for that price. Thus, they use the same principle that everyone in America has already found necessary

to be successful in their business operations. Holding actions are only used to implement our collective bargaining program.

There are two types of holding actions. First, test holding actions which are of short duration are used to test the support of farmers and market reactions by using a limited number of commodities that farmers are normally trying to determine whether to sell this week or next week.

Secondly, when a sufficient number of farmers over a large enough area indicate their willingness to hold, then an all-out holding action will be called including all farm commodities and we will hold until we have reached agreements to stabilize prices and marketing conditions in the future. In holding actions the NFO advises its members to hold for the prices determined by the members through their county bargaining committees and suggests that non-members support the efforts.

How will plans be carried out from "headquarters" to "grass roots" level?

The county officers in each county organized in the NFO set up a minute man system. The minute man system consists of one NFO member for each 30 farmers (both members and non-members) in the county and it is the responsibility of the minute men to inform the farmers when a holding action starts, the purpose of the holding action, the progress of the holding action, and when a holding action is called off. Information on a holding action is passed out at national headquarters and through the chain of command every farmer throughout the NFO territory will be notified by word of mouth within a period of six hours by the minute men.

Suppose you are successful in bringing market prices up to the predetermined level. Won't the sudden release of holding actions flood the market and cause a break in prices?

Our strategy has been carefully designed to prevent this from happening. This is the reason for holding actions of short duration using a limited number of commodities until we have gained sufficient strength so that all farm commodities can be included in an all-out holding action. Then we intend to hold until we reach agreements that will stabilize prices and marketing conditions in the future, which will prevent a break in prices as a result of holding actions.

In the two test actions we have held, the reaction has been just the opposite of falling prices because the inventory was being used while the holding action was on, and therefore, when the holding action was called off, the processors were very anxious to fill their needs.

What are NFO's plans for future holding actions?

We have been organizing as rapidly as possible, realizing that farmers must organize to solve their problems — they do not solve their problems and then organize. You can expect plenty of action from now on. On August 9, 1960, 10,000 members of the NFO met at Des Moines, Iowa, and agreed to an all-out holding action on or before July 1, 1961. However, all plans and efforts are being directed toward an all-out holding action at the earliest possible date and test actions may come at any time. And any time that farmers rally around a test action in sufficient numbers, that action will go into an all-out holding action.

What products will be involved in these holding actions?

NFO members voted to include hogs, cattle and sheep in the next test action. In an all-out holding action many additional commodities will be included which will be announced at that time.

Dairy products will not be included in any action until an all-out holding action we feel that we can win in a relatively short time. Dairy is the most sensitive commodity and is likely to be the first break-through to bargaining in an all-out holding action.

We are advising our members to hold corn for $1.49 per bushel and soybeans for $2.56 per bushel on grades No. 1 and 2 and suggesting that non-members support our efforts. We have advised our members to take the support loans on each of these commodities to cover operating expenses and hold for the above prices. This means they have nothing to lose and everything to gain because this is all they could have received at harvest time.

How many farmers do you think will have to comply with holding actions to make them effective?

Marketing analysts have pointed out that any time 25 percent of a commodity is grouped for the purpose of bargaining, this is sufficient production to be the determining factor in the market.

Let us analyze what has happened and what will happen to holding actions, and their effect upon bargaining.

Suppose there is 60 percent of the normal supply going to market and 40 percent being held. This means you can take the percentage going to market, compare it to the average daily consumption against the inventory and figure how long it will be

before the present marketing system must come to the NFO to fulfill their needs. At this point you become the determining factor in the market. The percentage being held will determine the length of time it takes the farmers to price their products at the marketplace. The larger the percentage being held, the quicker the victory.

How will it be determined to end the holding actions and release products to the market?

The members voted that the Board of Directors and National Officers should decide when to call a holding action, what commodities to be included and to determine the duration of a holding action.

Does your plan call for any control over production among NFO members?

Farmers cannot legally control production as such; only the government can do this. However, it is never more than a small percentage of the production that is held over the entire market to keep the prices down on the rest of the production. By a two-third's vote of approval by the members, a surplus disposal program may be enacted which would make it possible to divert that small percentage to underprivileged groups, school lunch programs, and distressed areas overseas.

Also, by a two-third's vote of approval, pools based on quality could be established by letting on the market that production for which you could get a price and diverting the remainder from the normal channels of the market. Both of these methods, of course, will be used only when you have most of the production included in your bargaining efforts.

There are two points that should be considered in this matter. First, you do not have overproduction as long as you have hungry people in this nation and throughout the world. To a degree, it is a matter of poor distribution in the present marketing system.

If we study our present marketing system it is little wonder we have and have always had a farm problem. For example — all grain and livestock prices are established by the auction system (Board of Trade or Terminal Markets) with prices set by processors and chain stores whose goals would certainly be to buy as cheaply as possible. These same marketing interests set the incentives that affect quantity, weight, and quality. Nowhere in our market incentives is the producer's interest considered or protected, or is any thought given to the use of market incentives to guide production for months or years ahead.

It would make a great deal more sense to use our market incentives to guide production a year ahead. We should have a producer check-off, both to promote sales and open up new markets, and to dispose of possible surpluses. In short, we must modernize our marketing system.

The NFO believes farmers must organize and put enough economic pressure on processors until they will bargain in good faith with farmers on these matters.

The second point to be considered is that farmers have produced the most when they were striving to meet their obligations because the prices they received for their products were not sufficient to cover their operating expenses. Therefore, it is likely that if the family-type farmers receive a good price for their products they will produce less instead of more.

There are some indications that packers and processors are already getting into the livestock finishing business. Apparently they are able to do this at a profit at present market prices. Won't any action to raise prices of livestock through holding actions aggravate this situation?

No. The only way you combat the concentrated buying and selling power — both at the processor level and at the retailer level — is through a collective bargaining program for agriculture because individual farmers can no longer compete with this tremendous concentrated power that has developed and is growing.

One reason the processors are in the livestock finishing business is because of cheap grain. Therefore, when you raise the price of grain you discourage their feeding operation. This brings out the strength of the NFO collective bargaining program and the necessity of perfecting your collective bargaining program for the American family-type farmers on all commodities under one organization.

You also counteract these efforts through the use of full supply contracts and coordinating or alternating with holding actions "no sell, no buy" campaigns, by making the processors choose between doing business with the family-type farmers or through their own feed lots or vertical integration.

At the present time the American family-type farmers have both the selling and purchasing power to demand fairness because they have the volume. When it gets to the point that vertical integration and feeding operations from large investment interests can furnish a great portion of the supply to the processors, then the American family-type farmers have lost their opportunity to bargain effectively.

Time is running out for the American family-type farmers and they must act now to use their tremendous buying and selling power in a fair and just manner.

What additional methods does the NFO intend to use to establish farmers' bargaining power?

At our recent national convention, the delegates voted to include "no sell, no buy" campaigns to be used in coordination with or alternated with holding actions. Usually there are five or six large processors that purchase a great percentage of any given commodity. For example, when one or two of these processors indicate their willingness to bargain or sign a contract with the NFO, approved by the members, the NFO will recommend that farmers sell only to those processors until such time as the other processors agree to like terms.

Steps will be taken also to protect small processors. The "no buy" part of the "no sell, no buy" campaigns will be used when feed companies or others are jeopardizing the future of the American family-type farmers through vertical integration or contract feeding, by recommending that farmers do not buy from those engaged in such activities until those activities have ceased.

Another method to be used will be full supply contracts with the NFO being the supplier.

How many counties are presently organized in the NFO?

The NFO is now organizing in 353 counties in 12 midwestern states.

(*Continued on page* 21)

EDUCATIONAL INSERT

BETTER FARMING METHODS

A SPECIAL REPORT ON

BETTER SILAGE PRESERVATION

Animal Nutrition Department
COMMERCIAL SOLVENTS CORPORATION
260 Madison Ave., New York 16, N. Y.

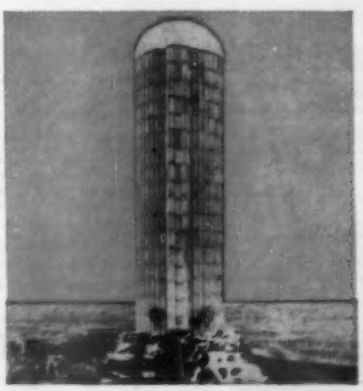
Now In Commercial Use By Farmers, Silotracin Proves To Be Low-Cost Silage Insurance

Thousands of satisfied users report Silotracin, new silage preservative with antibiotic action, prevents spoilage—protects valuable proteins —stops offensive odors.

First, Silotracin was tested for several seasons in college field trials. Now this silage preservative has gone through one year of commercial use. The farm reports are in. The reports prove Silotracin to be effective, low-cost silage insurance. Because of its selective antibiotic action, Silotracin eliminates guesswork. It reduces shrinkage, minimizes spoilage, and loss of nutrients. It stops offensive odors. Farmers report Silotracin delivers these important advantages:

1. **No antibiotic residue in the silage** — none can appear in the milk. The antibiotic disappears before the silage is fed. In fact, laboratory trials have shown that no antibiotic residues are encountered in the milk or meat even when many times the level of Silotracin needed for preservation was fed to cows. FDA clearance is not required for Silotracin. However, it is necessary to register feed tags with U.S.D.A.

2. **Ends offensive odor.** Offensive odor, caused by butyric acid, is eliminated when Silotracin is used. Silotracin results in sweeter-smelling silage. And, by insuring the right acid conditions, it practically eliminates surface spoilage—often a major factor in bunker or trench silos with their large surface areas.



3. **Improves protein digestibility, lowers ammonia production.** College tests with cattle and sheep have shown that Silotracin significantly increases protein digestibility. Digestibility was also improved for nutrients other than protein. Because less nitrogen escapes as ammonia in Silotracin-preserved silage, silage from farms was found to have greater protein content.

4. **Easy to handle.** Farmers reported Silotracin was easy to handle—did not irritate the eyes, nose, or throat. That's because Silotracin does not produce highly-corrosive sulphur dioxide. It can't harm blowers, choppers, or the silo itself. Silotracin is easy on equipment, easy on the person.

5. **Silotracin preserves nutrients.** The farm reports indicated that Silotracin preserved the nutrients in grass and legumes over a wide range of harvesting and storage conditions — in all types of silos. It reduced spoilage and shrinkage, made silage more profitable. All in all, it took the guesswork out of silage making.

HOW SILOTRACIN WORKS

Silotracin's antibiotic action is highly selective. It discourages bacteria which produce poor silage. By so doing, Silotracin encourages those bacteria which must predominate to preserve the greatest amount of nutrients in a form palatable to cattle.

THOROUGHLY TESTED

After a full year of use in thousands of silos, Silotracin has proven successful. It has also been thoroughly tested in the laboratory and in college field trials for several years. Both farm experience and scientific testing have shown that Silotracin consistently makes good silage in any type of silo—upright, bunker or trench. In each case the Silotracin-treated silage was in excellent condition.

SAFE TO HANDLE

Because it relies on antibiotic action, Silotracin contains no chemicals that produce highly-corrosive sulphur dioxide. It therefore will not irritate the eyes, skin, nose or throat.

This non-corrosive quality also makes Silotracin easy to handle. It won't harm blowers, choppers, or the silo itself.

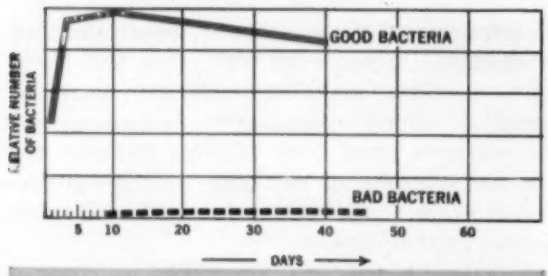
FIRST 72 HOURS CRITICAL

Preservation in the silo permits great savings of nutrients in fresh grass—if the proper conditions are established in the silo during the first 72 hours after ensiling.

Silotracin gives farmers better control of silage-making during this critical period.

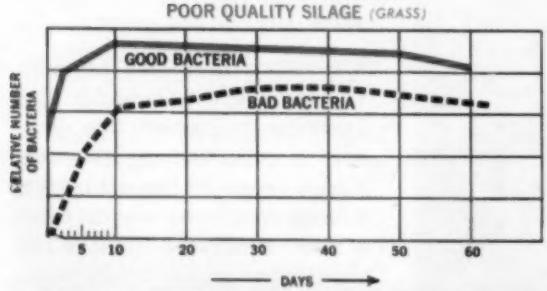
The charts below show the rapid growth of bacteria in the first three days after ensiling. "Good bacteria" produce lactic, acetic, propionic acids which are present in large amounts in well-preserved high quality silage. "Bad bacteria" produce butyric acid and other foul-smelling compounds. In addition, the "bad bacteria" break down protein to ammonia which escapes as a gas.

BACTERIAL GROWTH IN
GOOD QUALITY SILAGE *(GRASS)*



Note that the key to good silage is the suppression of bad bacteria. This enables the beneficial bacteria to develop vigorously in the critical first 72 hours.

BACTERIAL GROWTH IN
POOR QUALITY SILAGE *(GRASS)*



Note that in poor silage where putrefaction has "taken over", the bad bacteria have not been inhibited, have been allowed to develop at essentially the same rate as the good bacteria.

WHAT GOOD GRASS SILAGE NEEDS

Good grass silage requires a good quality crop—leafy, high in protein, low in fiber, and low in lignin. Moisture content should be reduced to prevent excessive seepage or runoff.

Chopped forage must be uniformly distributed in the silo and properly packed to exclude as much air as possible. When filled, the silo should be covered evenly to exclude air. Then comes the critical step. The pH value must be rapidly reduced to provide the proper acid conditions for nutrient preservation. This is basically a problem of selectively controlling bacteria. A job Silotracin does so well.

Remember though, as good as Silotracin is, it still does not lessen the need for effective packing and sealing of the forage from air invasion. In other words, Silotracin is no substitute for good silage management.

HOW BACTERIA "MAKE" SILAGE

Bacteria are largely responsible for the conversion of plant carbohydrates into lactic, acetic and other organic acids.

In good silage, lactic acid predominates. It is formed quickly—in the first 72 hours—and is sustained at high levels throughout the storage period. Acetic acid and propionic acid are also produced.

In spoiled silage butyric acid, which has a most offensive odor, predominates. The bacteria which produce butyric acid feed on the valuable lactic acid with the result that the feeding value of the silage is seriously reduced.

WHY SILOTRACIN IS NEEDED

Unfortunately silage cannot always be made under ideal conditions. The selective antibiotic action of Silotracin controls the bacteria until the desirable types grow and predominate in silage made under less than ideal conditions.

Silage treated with Silotracin has more of the "preserving" organic acids (lactic, acetic, propionic) needed for high-quality silage. Butyric acid, with its very offensive odor, is found in very small quantities in Silotracin-treated silage. The tables below show the results reported by scientists from Georgia and Louisiana.

Lactic and Volatile Acids Content of Silage Dry Matter

McCullough, U. of Ga.
Oat Silage

Treatment	pH	Lactic %	Acetic %	Propionic %	Butyric %	Total Desirable Acids %
Silotracin	3.8	9.1	2.4	+	—	11.5
Control	4.0	9.1	0.7	—	—	9.8

(Despite the fact that the control was high quality silage, Silotracin produced greater quantities of the desirable acids.)

Comparison of Organic Acids in Silage Preserved with Different Preservatives

Rusoff, LSU
White Dutch Clover

Treatment	pH	Lactic %	Acetic %	Propionic %	Butyric %	Total Desirable Acids %
Silotracin	4.4	3.2	2.6	0.6	0.8	6.4
Control	5.3	1.3	1.3	0.2	1.9	3.8
Molasses	4.8	2.8	1.8	0.6	1.3	5.2
Metabisulfite	4.4	2.9	2.8	0.5	0.9	6.2

These tables show the increased content of desirable organic acids resulting from the bacteria-controlling action of Silotracin. The lower the pH number, the greater the acidity.

SURFACE SPOILAGE REDUCED

Spoilage at the top of the silo is generally a more important factor in bunker or trench silos than in upright silos because of the greater surface areas. Silotracin, by insuring a change to the

proper acid conditions, practically eliminates the surface spoilage. The two statements that follow illustrate this fact quite well.

Referring to eight bunker silos containing some 1,150 tons of Coastal Bermuda grass silage, one operator says, "There is virtually no spoilage: an absolute minimum on top and at the sides."

Referring to plastic sleeve silos, another report says, "There was a large amount of spoilage in the untreated clover silage . . . The larvae of blowflies began working in the spoiled silage around the edge of the silo. This attracted birds and the movement of larvae just under the surface of the plastic caused the birds to peck holes to get the worms . . . There was very little spoilage in the treated silage, there were no blowfly larvae, and no holes."

BETTER UTILIZATION OF VALUABLE PROTEINS

That Silotracin improves protein utilization is shown in three ways: First, it reduces ammonia production in the silo. Ammonia is produced during the degradation of protein. The following table shows that Silotracin, through selective inhibition of protein-destroying bacteria, reduces ammonia production, thereby conserving valuable proteins.

AMMONIA PRODUCTION IN SILAGE

Louisiana State University

Treatment	% Ammonia In Dry Matter
Silotracin (5 grams/ton)	0.40
None (control)	1.10

Second, Silotracin-treated silage is higher in protein. College reports of protein analyses of treated and control silage are shown for three types of forage material.

PROTEIN CONTENT OF SILAGE

Dry Matter Basis

College	Type of Silage	Percent Protein	
		Control	Silotracin
U. of Fla.	Pearl Millet	6.9	8.2
VPI	Alfalfa-Orchard Grass	5.0	6.3
U. of Fla.	Oat	15.1	17.2

Third, the protein in Silotracin-protected silage has been shown to be significantly more digestible than protein in the control silage. Increases in protein digestibility have been observed in silage. The following tables give the results obtained by scientists at the University of Florida from digestibility trials using beef cattle, dairy cattle and sheep.

SILAGE PROTEIN DIGESTIBILITY

Univ. of Florida

Species	Type of Silage	Percent Digestibility		Increase from Silotracin
		Silotracin	Control	
*Beef	Oat	61.0	50.2	10.8
**Dairy	Pearl Millet	76.9	74.2	2.7
*Sheep	Oat	63.1	54.9	8.2
*Sheep	White Dutch Clover	45.1	41.6	3.5

*Davis and McCall—1960 **Wing and Wilcox—1960

Improved digestibility of organic matter, nitrogen-free extract, fat and crude fiber is demonstrated in the following tables.

OAT SILAGE — SHEEP

G. K. Davis and J. T. McCall, University of Florida

Nutrient	Percent Digestibility		Increase from Silotracin
	Silotracin	Control	
Dry Matter	58.0	54.6	3.4
Fiber	77.7	74.4	3.3
Ether Extract	53.1	52.8	0.3
N.F.E.	57.5	51.3	6.2

WHITE DUTCH CLOVER SILAGE — SHEEP

G. K. Davis and J. T. McCall, University of Florida

Nutrient	Percent Digestibility		Increase from Silotracin
	Silotracin	Control	
Dry Matter	54.2	51.1	3.1
Fiber	62.2	59.6	2.6
Ether Extract	63.9	57.1	6.8
N.F.E.	56.6	53.8	2.8

OAT SILAGE — HEREFORD HEIFERS

G. K. Davis and J. T. McCall, University of Florida

Nutrient	Percent Digestibility		Increase from Silotracin
	Silotracin	Control	
Dry Matter	55.9	51.8	4.1
Fiber	77.2	76.7	0.5
Ether Extract	51.3	42.7	8.6
N.F.E.	47.9	48.9	1.0

PEARL MILLET SILAGE — DAIRY HEIFERS

J. M. Wing and C. J. Wilcox, University of Florida

Nutrient	Percent Digestibility		Increase from Silotracin
	Silotracin	Control	
Organic Matter	63.2	59.2	4.0

IMPROVED ACCEPTABILITY

Animals offered a choice show a preference for silage treated with Silotracin. The tables below show results from two controlled college trials testing palatability of Silotracin treated silage.

PREFERENCE STUDY
ALFALFA AND ORCHARD GRASS MIXTURE — HOLSTEIN HEIFERS

Blazer, et al, Virginia Polytechnic Institute

Records kept	With Silotracin	Untreated Control
Silage Fed, Daily	40 lb.	40 lb.
Refusal, Daily	4 lb.	7 lb.
Silage Eaten, Per Heifer	36 lb.	33 lb.

OAT SILAGE — AMOUNT EATEN — SEVEN DAIRY-TYPE STEER CALVES

Louisiana State University

Silage	pH	Silage Consumed Per Calf Per Day
Silotracin	4.56	15.6 pounds
Silotracin and Saccharin	4.84	14.4 pounds
Control	4.90	12.9 pounds

These results coincide with observations made by farmers who used Silotracin during the 1960 silage season.

GREATER EFFICIENCY IN MILK PRODUCTION

In the test below, Silotracin-treated silage was more efficient than other silage in the production of milk. Less Silotracin-treated silage was consumed per lb. of milk produced. This can be presumed to be the result of a greater amount of digestible nutrients in the Silotracin-treated silage.

FEED EFFICIENCY OF SILOTRACIN-TREATED SILAGE IN MILK PRODUCTION

Rusoff, LSU

Average lb. of silage consumed per lb. of 4% Fat Corrected Milk	Average for 3 periods of 14 days each, 12 Lactating Holstein Cows			
	1 Silotracin	2 Molasses	3 Bisulfite	4 Control
	2.5	2.8	2.6	3.2

TREATS GRASSES, LEGUMES, GRAINS

Silotracin was developed especially for making top-quality silage from grasses. It has been used with success on legumes and grains as well. Good results have been obtained with grasses such as Brome, Orchard, Johnson, St. Augustine, Bermuda; legumes such as clover and alfalfa; grains such as sorghum, oats, and millet.

NO ANTIBIOTIC RESIDUE

The antibiotic in Silotracin—specially processed zinc bacitracin—disappears *before* the silage is fed. However, just to be sure that a silo opened very early would also provide safe roughage, the following test was conducted. Enough Silotracin was placed in feed to equal what would be found in 30, 60, or 120 pounds of freshly cut forage. This was then fed directly to six dairy cows, three Holsteins and three Jerseys. The milk was checked each day during a 10-day feeding period. Not a trace of antibiotic activity was detected! The reason? Zinc bacitracin is not absorbed by an animal's system!

TEST FOR ANTIBIOTIC RESIDUE IN MILK — 1960

Breed	Silotracin Zinc bacitracin fed milligrams per day	*Amount treated silage needed to provide this quantity antibiotic	Amount antibiotic in milk
Holstein	75	30 lb.	None
Holstein	150	60 lb.	None
Holstein	300	120 lb.	None
Jersey	75	30 lb.	None
Jersey	150	60 lb.	None
Jersey	300	120 lb.	None

*Note: These are the amounts of fresh-cut forage treated with recommended levels of Silotracin necessary to provide the amount of antibiotic that was actually fed in this test.

ACTION OF CARBOHYDRATE PRODUCTS ENHANCED BY SILOTRACIN

Silotracin is used to advantage with feedstuffs that are added either as a source of carbohydrate or to absorb moisture. Andrews and Stob of Purdue University working with Brome Grass-Alfalfa Silage showed that Silotracin improved silage quality even in the presence of 40 pounds or 80 pounds of molasses per ton. As compared with molasses alone, the silages containing Silotracin plus molasses were higher in dry matter, protein, fat and nitrogen-free extract.

Silotracin has also been used successfully in combination with ground corn, soybean mill feed, beet pulp, bran, citrus pulp and hominy. Silotracin, since it exerts its action by selectively inhibiting the undesirable organisms, simply accentuates the effectiveness of these conventional silage additives.

HOW IS SILOTRACIN APPLIED?

The antibiotic in Silotracin is supplied to the farmer as a dry product on a feed ingredient base. Silotracin may be metered into the forage as it is chopped in the field, or as it is blown into the silo. Or, it may be strewn by hand onto the forage in the wagon or in the silo. Preparations containing Silotracin are applied at a rate to supply 5 grams of the antibiotic in Silotracin per ton. For example; a preservative containing 1 gram of antibiotic per pound of Silotracin is applied at the rate of 5 pounds per ton of forage. The following table shows the recommended application rates for preservatives containing different levels of Silotracin.

Level of Antibiotic in Silotracin Preservative	Amount of Preservative to Use on Forage
1.0 gram/pound	5 pounds/ton
0.5 gram/pound	10 pounds/ton
0.2 gram/pound	25 pounds/ton
0.1 gram/pound	50 pounds/ton
0.05 gram/pound	100 pounds/ton
0.025 gram/pound	200 pounds/ton

WHAT USERS OF SILOTRACIN HAVE TO SAY

1. "The Silotracin silage was accepted immediately, while the control silage was refused by all the heifers for four days, and by some for six days."
2. "Steers consumed almost twice as much silage preserved with Silotracin as the other silages."
3. "This is the most palatable silage we have ever fed."
4. "There is a marked preference for the Silotracin-preserved silage, which is reflected in terms of consumption figures."
5. "The silage has a mild, pleasant odor."
6. "There is a total absence of putrid silage and of the sharply acid odor, common in silages of this type."
7. "The treated silage has a 'good' odor, the control silage a 'sharp' odor."

HOW SILOTRACIN IS MARKETED

Silotracin is available only to feed manufacturers in two forms:

a.) Silotracin Ready-to-Use—containing 1 gram specially processed zinc bacitracin antibiotic per pound.

b.) Silotracin Concentrate—containing 40 grams specially processed zinc bacitracin antibiotic per pound.

The concentrate is produced for feed manufacturers who wish to blend and package their own ready-to-use silage preservative.

Both products are shipped in 50-pound multi-wall paper bags.

Literature with instructions for correct preparation of feed tags when making Silotracin Ready-to-Use is available on request.

Remember! Experts agree that use of a preservative does not lessen the need for effective packing and sealing of the forage to exclude air. Preservatives do not substitute for good management.

Good silage management can cut down waste of excess forage crops.

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Animal Nutrition Department

COMMERCIAL SOLVENTS CORPORATION

260 Madison Avenue, New York 16, N. Y.

NFO — Farmers' Bargaining Agent

Continued from page 16

More than 3,000 voting delegates attended the national convention held at Des Moines, Iowa, on December 5 and 6 from Iowa, Illinois, Missouri, Kansas, Nebraska, South Dakota, Minnesota, Wisconsin, Indiana, Ohio, Michigan, and Kentucky.

What are your hopes for legislation to help the farm income problem?

We believe that basically the farm problem will be solved permanently only when the farmers do it themselves. But we will work for any legislation or administrative policies that will assist the farmers in raising their income as this will make our goals just that much easier to reach. End.

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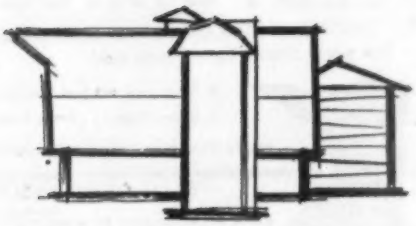


WHAT AGRICULTURE IS UP AGAINST

Has all of agriculture's present predicament been of its own making? Absolutely not! There have been many forces outside agriculture that are responsible for the present situation. We must understand what these forces are before we can begin to choose between the many proposals now being offered to overcome the "farm problem". Proposals now being made are largely aimed at the surplus-overproduction aspects within agriculture. Outside forces, too, must be reckoned with if programs for curing the "farm problem" are to be successful.

by EARL O. HEADY and JOHN F. HEER

CONDENSED FROM IOWA FARM SCIENCE

● THE MOST APPARENT symptoms of agriculture's troubles — "the farm problem" — are the farm income and overproduction-surplus situations. "Something needs to be done." But what? The need for developing more effective approaches than have been used in the past now is generally recognized. Many proposals now are being made and will be made toward overcoming our farm problem.

To help in choosing among the different approaches being suggested, we want to review some of the forces and changes that have been behind the development of agriculture's present state. For these same forces must also serve as a backdrop for our solutions if we're to approach them realistically.

Not All "Farm" . . .

All of agriculture's predicament hasn't been of its own making. National economic growth and development — and their consequences — are behind much of the present situation. While there may be little that we can do about this side of the picture, it's important to understand its meanings and implications for agriculture. So we want to look mainly at agriculture in the perspective of this over-all national picture.

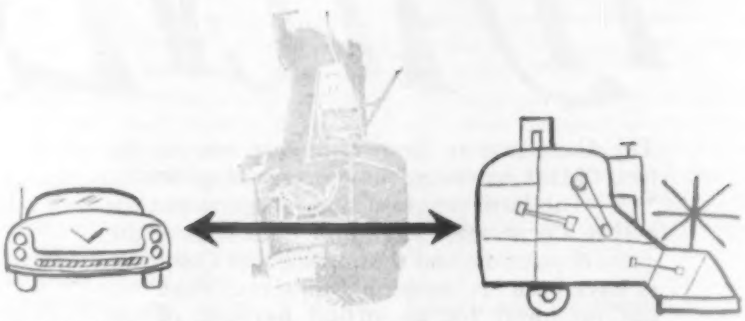
National Forces . . .

Compared with the rest of the world, we have a wealthy and productive economy. But economic maturity is only relative. Plants and animals mature at a certain time and stop growing. Economic growth doesn't, and further growth and development lead to still more changes in the shape of things.

EARL O. HEADY is professor of agricultural economics and executive director of the Center for Agricultural and Economic Adjustment. JOHN F. HEER is editor of Iowa Farm Science and a former extension economist.

Our national economy has grown. In doing so, the relative proportion of agriculture has declined — while the proportion of other goods and services demanded by well-fed and prosperous consumers has grown.

The *importance* of agriculture hasn't declined. It's still basic to the life of the consumer who now, however, spends a smaller portion of his income for farm products than he used to. Agriculture has declined in the portion of national income it contributes (and receives) and in the proportion of total national resources it employs.



Part of the cost-price squeeze in farming results from demands for some of the same resources for farming as well as for non-farm uses.

Why . . .?

Many of the changes that are affecting agriculture result particularly from the fact that we have a productive and prosperous economy and because income per family and per person continues to rise. National income has gone up about 7 per cent each year in the past 10 years. Income per person has been increasing by about 5 percent a year.

As the real income or purchasing power of consumers has increased, consumers haven't voted for less food. But, already well fed, neither have they voted for more food per person. They've voted for large increases in other goods and services.

These kinds of shifts in our economic balloting have been going on since World War I, and it's likely that they'll continue. Progress and economic growth seem to be a basic goal of our society. It's unlikely that we'll try a "backswitch" and voluntarily seek out a lower income and standard of living.

If the "pattern" is set then, why not just ignore it? For one thing, the situation won't just go away or disappear; it's going to stick with us. We could just ignore it and let things happen. This is one choice or alternative. But let's look more closely at some of the changes and their meaning for agriculture.

A century ago, agriculture contributed nearly a third of the national income; 50 years ago, the proportion had dropped to about 16 percent. Recently, net income from agriculture has been about 5 percent. And this trend will continue as national and per-capita incomes continue to grow.

With no startling developments in foreign markets, the *demand for food* can grow only at about the rate of our population increase. The *demand for other goods and services* can and will grow at a much faster rate. The demand for them isn't limited by consumer food capacity, and consumers buy more of them as soon as they have enough income. As a result, more and more resources will be used in producing these other goods and services.

Farm income, thus, will grow more slowly than that of the nonfarm sector, and its percentage of total income will decline further. The proportion of the nation's resources in agriculture likewise will decline — and at a faster rate than the portion of national income provided by agriculture.

There's just no getting around the fact that, once well fed, consumers in a wealthy society and growing economy vote — through their spending — for additions in the supply of capital and labor to be used mainly for nonfood products.

Capital in agriculture has increased in the last 25 years or so, but not as fast as in nonfarm industry. The proportion of the nation's capital used in nonfarm industry has expanded; that in agriculture has declined.

The labor force in agriculture has been more than halved in the past 40 years. It has declined by at least a third in the last 10 years. Agriculture used well over half of the national labor force 100 years back; even 50 years ago, well over a third. The percentage now is less than 10 percent. It will drop further.

These changes in relative demand, labor force and population have altered the economic structure in changing the shape of our over-all economy. They'll continue to do so. They're also changing the social and political role and voice of agriculture — perhaps more so in the future than in the past.

All of these changes result naturally from economic growth and national wealth — "naturally" because it's the basic biological and psychological nature of man that dictates that the shape of things will change with economic growth.

Can't Go Back . . .

We've drawn this picture of the situation partly within but mostly *surrounding* agriculture to set up a perspective before moving on to the situation *within* agriculture in our next article. We've done this because it's so easy to look only at the shape of things in the past — without fully

(*Continued on page 26-B*)

HARVESTS of INSANITY

The Congressman from Delaware rose to his feet. "Mr. Chairman," he began apologetically, " . . . The farm program that Congress put together a generation ago in the dark days of the great depression, and that subsequent Congresses have been embroidering upon ever since . . . has produced for us virtual harvests of insanity that we can neither sell nor give away . . . "

This article by Asher Brynes is being reprinted from the August 1960 issue of Commentary to give Better Farming Methods readers the city view of farm programs and is part of our continuing policy to present all viewpoints on agricultural topics.

The seriousness of the farmer's political problem was illustrated by Karl D. Butler, Farm Counselor, Avco Corporation, when he said recently, " . . . it is my feeling that future farm legislation must be reasonably sound because such a small part of our population now lives and derives its income directly from farms. True, perhaps 40 percent of our economy's welfare is highly dependent on agriculture, but the Congress of the United States represents our urban population perhaps to the extent of about 90 percent. In other words, we are going to be forced to have reasonably sound programs, even though perhaps not as sound as they might or should be. Public wrath will rain down on farmers and those who supply them unless Congress can justify to the public the type of farm program implemented by any administration."

● WHEN, LAST MAY, the omnibus Agriculture Appropriation Bill for 1961 was on the floor of the House for final consideration, a city Congressman rose to say: "There are literally no farmers in my district . . . [yet] our part of this $4,000,000,000 appropriation is about $100 per family. The question in my mind is, should I vote 'aye' when my name is called on this bill? The report would seem to indicate that we have been pouring money down a rathole here."

Throughout the session on the preceding day, when some two dozen members had joined in friendly debate, there was no comment of this kind. Congressman Jamie Whitten of Mississippi, floor manager of the bill, rose to answer: "Is the gentleman asking a question?" "Yes." Thereupon Mr. Whitten launched into the only general justification of the Agriculture Appropriation Bill that had seemed called for in two days of bickering over small points. "May I say," Mr. Whitten began, "that a big part of this bill is commitments where we have contracts, so we have to pay them. Our report [the report of Mr. Whitten's Subcommittee on Agricultural Appropriations] points up the feeling . . . which is very similar to that of the gentleman, that we need to do something . . . we are getting into more and more trouble, and in spite of the cost, the farmer's situation is getting worse. We point out in an effort as best we can to push forward some improvement [*sic*]. But I do not think we would be doing the right thing not to pass this bill — we would be violating contracts, and we would be making bad matters worse."

The city Congressman persisted. "May I ask one more question? . . . I notice that the personnel in the Department of Agriculture has jumped from 67,000 in 1952 to 86,000 today. At the same time farm families have dropped around 700,000 and the farm population has dropped by three million. Would someone explain to me why we need more people in the Department when we have a smaller number of farmers to work with?"

To this Mr. Whitten replied: "The gentleman will remember that we wrote about this in the report and pointed these facts out because we have some question about it, too."

As this sitting of the House drew to a close after having produced that day more than thirty pages of small print, triple column, in the *Congressional Record* (in addition to forty-six pages the day before), a Delaware Congressman rose to deliver the one other substantial speech in opposition. "Mr. Chairman," he began apologetically, "I presume that in some quarters a vote against this bill will be considered an act of legislative irresponsibility. Maybe so, but, for as long as the present politically inspired Congressional deadlock that prevents the passage of constructive legislation in the price-support field continues, I shall feel constrained to vote against any and all agricultural appropriation bills . . .

"The farm program that Congress put together a generation ago in the dark days of the great depression, and that subsequent Congresses have been embroidering upon ever since . . . has produced for us virtual harvests of insanity that we can neither sell nor give away . . . One can search in vain," he concluded, "without finding any specific suggestions for improving the situation worthy of grasping for as a drowning man might grasp for straws."

The bill was then passed without a record vote.

Cost $26 Billion

In the last seven years the support and subsidizing of agriculture has cost the people of the United States $26 billion. With the passage of the present bill the schedule has been set for a total farm expenditure by the administration of $32 billion.

The billion-dollar agricultural appropriation bills drift whole and untouched through months of subcommittee and committee hearings and successive debates in both houses of Congress year after year, and so great is their political momentum that they are rarely amended except to shift the billions around a bit inside each bill.

Nearly every cent of the billions appropriated for agriculture has been legislated as well as expanded to the accompaniment of expressions of distaste by Ezra Taft Benson, the conservative Secretary of Agriculture who will probably be remembered as the man who spent the most money, most unwillingly, in all the long history of the United States.

What forced his hand? What made agriculture the third largest item in the national budget, outranked only by Defense and interest on the (Defense-generated) national debt — and followed by the (Defense-generated) Veterans Administration?

Farmers Are "The People"

Partly, the answer lies in the place that farmers have traditionally occupied in the American scheme of things. In 1776 and 1787 nine-tenths of all United States citizens were farmers. Certain of the Founding Fathers — Jefferson most prominently — conceived of democracy as the way the people would forever govern themselves while toiling at agriculture to earn a living. "Cultivators of the earth are the most valuable citizens. They are the most vigorous, and they are tied to their country, and webbed to its liberty and interests by the most lasting bonds." On another occasion, Jefferson noted that the "Corruption of morals in the mass of cultivators is a phenomenon of which no age has furnished an example."

This idea that farmers are The People was written into our federal and state constitutions (and also into a great number of statutes) over the next century and a half. And to this very day, rural voters have maintained a disproportionate grip on the government in practically all jurisdictions but the municipal. (The citizens of Iowa, for instance, are now locked in struggle because farmers and rural people still control the state legislature although they compose less than a third of the state population.)

In the decade before the First World War, one American in three was a farmer or a member of a farm family, and practically everybody had a relative who lived on the land. Agriculture was then at a peak of prosperity. The present price-support laws,

(*Continued on page* 28)

Asher Brynes collaborated with Ezra Taft Benson in the research and writing of *Freedom to Farm*, which has just been published by Doubleday. He has been Confidential Assistant (representing the non-farm point of view) to Secretary Benson and was also for a time chief of the Research and Development Staff of the Office of International Trade Fairs in the Department of Commerce. This article is a first statement of his own conclusions after two years of concern with agricultural politics.

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American Sisalkraft Corporation would like to send you a free copy of their brochure explaining how to protect crops and equipment on the farm with Sisalkraft.

43—Perforated Drain Pipe

A new brochure from Johns-Manville describes how perforated Transite Under-drain pipe can serve your ground water control needs. They'll send you a free copy if you'll circle the postal card number above.

44—Profit With Alfalfa

"20 Proven Ways to Profit With Alfalfa" is the title of a brochure available free to Better Farming Methods readers from Certified Alfalfa Seed Council.

45—Protect Forest Plants

Pennsalt Chemicals Corporation recently announced the development of a contact animal repellent which protects plants against damage from rats, meadow mice, and to a lesser extent, deer. For further information, circle the postal card number above.

46—Farm Grain Storage

Behlen Manufacturing Company is offering free to readers of Better Farming Methods their 1961 Edition, Farmers Reference Handbook, "You . . . and On-The-Farm Grain Storage." This booklet is a simple, easy-to-understand review of A.S.C. and C.C.C. regulations on grain storage on the farm and ordinarily sells for 75 cents a copy.

47—Belt Driven Pasture Clipper

A new Model V-90 "Ranger" three blade belt driven pasture clipper has just been introduced by Servis Equipment Company. Circle the postal card number above to get complete details.

48—Aeroglide Grain Driers

Aeroglide Corporation would like to send you complete information on their batch driers and continuous flow driers that feature the L.S.U. Baffle System which evenly distributes drying and cooling air through the grain. Circle the postal card number above.

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You're invited to send for a free copy of Allis-Chalmers' new brochure describing their D-15 series of farm tractors in gasoline, LP gas, or diesel.

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Tait Manufacturing Company offers you a free booklet on how to select the ideal water system for use on your farm. Get your copy by circling the postal card number above.

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Walsh Manufacturing Company invites you to send for a free copy of their brochure describing their multi-purpose round nursery pens for farrowing pigs . . . lambing . . . or individual calf pens.

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All of these things . . . and many more . . . we will discuss with you in future issues. We hope you will find it interesting and helpful. Your comments will be appreciated.

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C★★★

What Agriculture Is Up Against

(Continued from page 23)

recognizing the possible role and structure of agriculture in the future.

All consumers, farm and nonfarm, have gained greatly from the progress in agriculture. Food is abundant and at relatively low prices. American consumers needn't spend most of their income for food as is the case in much of the world. Consumers have gained as much or more from the technical advances and productivity gains of nonfarm industries. These have made goods and services available in great quantity and variety at prices that can be paid by the average farm and nonfarm family.

We couldn't have achieved our present standard of living if the major portion of our population and capital resources were required to produce food and fiber. Gains in productivity and technology in both agriculture and other industries have freed resources to produce the many other goods and services that we now take for granted.

As a part of this over-all change in the structure of our national economy the nonfarm part has been rising. Agriculture's part, in turn, has been declining — especially as a result of economic growth and increasing per-capita incomes. **Agriculture can grow profitably only at about the rate of our population increase. Other industries can grow much faster.**

The demand for many goods and services isn't limited by the capacity of the human stomach; the demand for them increases both with population increase and as income per person increases.

The consumer, in the price he'll pay and the amount he'll buy passes on a higher return to resources used for the goods and services he wants most as he grows wealthier. He puts a premium on steel, wood, petroleum, chemicals, labor and other resources used to produce the items he wants most with his increased income. But these resources command the same prices — even though they may not give the same return — if used in agricultural production.

This is the basis of the cost-price squeeze that has become more and more critical in agriculture over the past 10 years. It has resulted in lower returns in labor and other resources used in agriculture than these same resources would earn in many other industries. With the wealth and income of the national economy being what they are — and still increasing — and with agriculture already having a surplus production capacity, both farm and nonfarm consumers are using their price votes for more resources to be transferred to the production of other goods and services.

Making Choices . . .

We need to understand these changes in national economic structure and their implications if we're to devise and select policies and programs that don't cause us to try to "swim upstream" or even further aggravate the symptom problems of farm income and surplus. It's difficult to prescribe even a good painkiller unless we recognize the basic cause of the malady. This is why we've stepped back in this article to take a look at the total picture of our national economic growth and development and its meaning for agriculture. We've pictured this setting to show some of the forces that agriculture faces in realigning future farm policy. These are the forces that are dictating the place and role of agriculture in our present and developing national economy. While there probably isn't much we can do about this part of the picture as it affects agriculture, we must take it into account in the future farm policy approaches that we choose.

The impacts of some of the forces mentioned in this article are heightened by the fact that agriculture is producing a surplus output. The forces operating within and outside of agriculture are related, but they aren't identical.

Most of the farm policy proposals being made at this time emphasize various means of cutting back or using up surplus farm production as the most critical and immediate goal. The proposals include land retirement, increased exports, land-use easements, crop quotas or allotments, income aid and many other possibilities. At the same time, there's increasing recognition of the real forces involved — and, also important, of more of the possible social (as well as economic) consequences of alternative courses of action or inaction.

Making the best choices among the proposals offered calls for a recognition and understanding of the basic forces both within and outside of agriculture that have led to the situation we now have. For if we want the measures we choose to be effective over time, they must be realistic in terms of the fundamental causes — rather than mere treatments of the symptoms alone.

Next month, we'll consider the forces operating mainly within agriculture — especially with respect to the surplus production part of the picture. Why and how does agriculture — caught up in the national trend outlined in this article — still tend to use so many resources and produce a surplus output? The reasons aren't as simple as a casual glance indicates.

End

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ECHOES

letters from our readers

SORRY, NO REPRINTS

Do you have available reprints of "Agriculture Can Compete With Big Business!" by Kenneth D. Naden, appearing in the December issue of Better Farming Methods?

The article was much appreciated here, and we would like to send it in its entirety to our growers. — *D. T. Thayer, County Extension Agent, Greenfield, Massachusetts*

Although we could not furnish reader Thayer with reprints, we were glad to give our permission to reproduce the article locally for distribution to farmers in Franklin county, Massachusetts. — Editors

LET'S GO BACK TO HORSES

Mr. Arthur M. Sasson's letter in the December issue . . . stated that he believed curtailment of commercial fertilizer would be the answer to our surplus problem. To me that would bankrupt more farmers than any other factor and would unfortunately eliminate the most progressive farmers. Those who farm like "grandpa" did would not be affected.

. . . If you want to take commercial fertilizer away I think we ought to go a step farther — we ought to go back to horses. The horses would eat enough to take about 100,000,000 acres out of production for the market and in addition we would need about 5 to 10 million more laborers on the farms to get the work done. Just think what this would do: (1) Our left-wing politicians would have all their phony "family farms" back, (2) surplus agricultural production would be a thing of the past, and (3) we would have to drain the people off the unemployment payroll. I know the above is asinine, but it is no more unsound economically than taking our best money-maker, commercial fertilizer away from us. . .

Yours for better farming — *Hiram M. Drache, Baker, Minnesota*

PLANS FOR THE FUTURE

Your new editorial concept which puts more emphasis on the social and economic aspect of agriculture has resulted in an outstanding publication. The economic and social impacts of changes in agricultural technology must be examined and this information widely diffused if the individuals, businesses, and communities so drastically affected are to make intelligent plans for the years ahead. Your article, "What Will He Grow Up to Be?" is an excellent case in point. No one should miss its clear-cut implications for a revision of educational policies in many smaller school systems . . . — *Ralph E. Dakin, Associate Professor, Department of Economics and Sociology, Kansas State University, Manhattan, Kansas*

HANG TOGETHER?

Of prime concern to me is the subject you write about in the November issue of Better Farming Methods entitled "Tool Up For the Bargaining Job", by G. A. Carpenter.

Since I am a farmer and not as well versed as I could be, I wonder if hanging together with positive control in a few hands is any assurance of success, especially to an organization which does not set forth any of the tools of successful bargaining except as membership relates to control of tonnage. — *Kenneth Klocke, Newark, Missouri*

WHO'LL COME OUT ON TOP?

I enjoy your magazine very much. It is by far the best farming magazine I receive.

I am certain of one thing — that regardless of what our politicians say or do — that good, productive land properly managed will come out on TOP. A magazine like yours helps immeasurably in proper land use and management . . . — *William P. Capp, 4-4 Ranch, Presho, South Dakota*

CHANGE ON THE FARM

A change has taken place here on the farm since I started receiving the important issues of Better Farming Methods.

I have searched since graduation for advanced knowledge in agriculture, as I did not attend a land-grant college, but with the presence of a detailed magazine explaining all specialized fields — even national topics — I feel as I have been allowed a chance to participate in the vast knowledge of higher learning.

. . . The eye of the Master is supreme — your staff has both eyes and ears and knows how to use them. *Kenneth L. Lewey, Broad-View Farm, Hillsboro, Illinois*

NOT A LETTER WRITER

I am not a letter writer — I am a dairy farmer with his nose to the grindstone 365 days a year. Ever since I first received your magazine I wanted to get this off my mind:

I'm thrilled to receive BFM. Thanks an awful lot for having me on your circulation list. BFM is the most thought-provoking and challenging agricultural magazine which my family reads and the contents of which we discuss. . .

Being engaged in agribusiness, the need for a publication like yours has become imperative. Public policy development has become the number one problem of agriculture and it is through your articles that I hope you can convey to our agricultural colleges and farm organizations the urgency of this problem — *Ernest M. Loew, Hampton, Connecticut*

LIKED DECEMBER EDITORIAL

. . . We would like to have your permission to reproduce or quote from your editorial, "Why U.S. Farmers Are Tops". —*K. O. Roe, Farm Adviser, Taylorville, Illinois*

Permission granted. Editors

YOUR IDEAS

This page is reserved each month so each reader of Better Farming Methods may "sound off" on any farm subject he desires. You may have some comment on the things you read in this issue. If so, send your ideas to us. We'll share them with other "thought leaders" of agriculture who are regular readers of Better Farming Methods.

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"Co-Ral eradicates more than 99% of all lice from 2400 head of cattle. Less than 1% of our feeders showed any evidence of lice infestation after spraying with Co-Ral."

—Wayne Scott, Foreman, Nielson Ranches, Belfry, Montana

"Co-Ral controlled lice over winter without a separate spraying, eliminating the special delousing we used to do in January. This eliminated driving cattle in from winter range and the injuries that resulted in losses as high as $900. Co-Ral now saves us this loss."

—Bruce Weber, Partner-Manager of Shovel Ranch, Merriman, Nebraska

"Lice constitute a very serious problem. These parasites are readily transmitted through an entire herd unless checked immediately upon their appearance. Co-Ral gets rid of these pests."

—William Seckler, Pres., Seckler Feed Yards, Inc., Sterling, Colo.

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HARVESTS OF INSANITY

Continued from page 25

in fact, stand substantially as written by political agrarians of twenty-five years ago, when the price of "basic" farm commodities was fixed at a guaranteed percentage of *parity* — a concept derived from the relation between farm and non-farm prices in the years 1910-1914 inclusive. This period has been American agriculture's most prosperous to date, and it provided a solid gold statistical yardstick with which to measure farm costs, prices, income, and other variables.

Nevertheless, during this very era, farm population kept declining and it declined even through the flash boom of the First World War. Continuing downward in the years that followed, it rose slightly in the depths of the great depression, then subsided again within the next two years. It has been slipping ever since. By 1954 farmers had dwindled to one-eighth of the population, according to the special farm census of that year. It has been estimated that when the figures for this year's decennial census are tabulated, they will show that farm population has shrunk to about 17 million out of a total of 180 million people — or 9.5 percent of the population.

Century-Long Trend

The latest figures simply mark a continuation of a century-long trend whose causes are deeply imbedded in our social structure. As Colin Clark put it, in *The Conditions of Economic Progress*: "Careful generalization of the available facts indicates that *the most important concomitant of economic progress is the movement of the working population from agriculture to manufacture, and then from manufacture to commerce and services.*" One of the products of economic advance is the expansion of opportunities for ill-paid, ill-housed, ill-fed country people to get better jobs in towns and cities. To country politicians this means lost votes, to country retailers and farm supply dealers lost trade, and to the farmers who have the skills and capital to stay put, an opportunity — given our political habits — to vote themselves considerable public support.

As farm numbers have fallen, agriculture has grown increasingly monetized: it takes more and more money to grow a crop. The farmer today has to spend seventy cents on supplies and labor before he can make a dollar. As a result, the economic ties between commercial farmers and local non-farm businesses and businessmen have become closer. At the same time, agriculture has also become increasingly consolidated. A family-type farm is now much larger than it used to be; the old 160-acre norm is obsolete — in the Corn Belt, for example, the general farm, if it is to yield optimum returns for the family labor invested in it, must approach 300 acres in size.

This process of consolidation — which has kept farm real estate values rising at an average rate of 6 percent yearly in the past decade, and as much as 12 to 14 percent in some areas — is still continuing (though it has slowed down in the past quarter). During and immediately after the Second World War, the consolidating process was facilitated by record profits; now it is fostered by technology and accelerated by competition. Improved models or new kinds of farm equipment and implements, fertilizers, and weed-killing, bug-killing, and growth-promoting chemicals; hybrid varieties or other improved strains of seed, scientifically compounded feeding supplements that contain antibiotics, minerals, and vitamins; portable irrigation systems — these and many other innovations, including such important factors as the new managerial technology of expanding output to lower unit costs on a given acreage and labor base — have enabled the more efficient commercial farmers and full-time farm workers to produce sufficient food and fiber for 100 and even more consumers per man.

Industry In Strong Position

As an industry, agriculture is now in a very strong position. Its total assets are up 300 percent above 1940, the value of farm land has increased by 400 percent; the average worth of a commercial farm is $135,000, and the average net income of commercial farm operators, from farming, is $7,200 per annum. As for that traditional indicator of trouble, the foreclosure rate, it was 16 per 10,000 farms last year; at the same time the compar-

If nitrate fertilizers were judged like hogs

A Grand Champion barrow over all breeds, International Livestock Show.

YOU BE THE JUDGE

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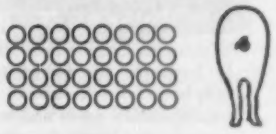

Uniformity is a key point in judging hogs or nitrate fertilizer. Phillips 66 Nitrate is produced by an exclusive process which assures free flowing bead-like shaped prills with amazing uniformity.

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Lardiness in hogs is as undesirable as odd-shaped lumps and powder in nitrate fertilizer. Phillips 66 Nitrate prills are round and firm—don't break up . . . coated to stop sticking or caking.

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Take haying for example. The 37-hp heavy-duty VG4D Wisconsin Engine is specially built for the Owatonna machine shown above. It provides both drive and work power—and keeps the equipment going around the clock and in 140°F. if necessary.

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Its high torque keeps the engine from stalling under shock loads. It is precision-built for long life and low upkeep. Tapered roller bearings absorb all thrusts. Stellite exhaust valves and inserts plus positive rotators *extend valve life up to 500%!*

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able bankruptcy rate for all non-farm businesses was 5?, or three and a half times higher.

The current Economic Report of the President sums it all up succinctly. Production per man-hour on farms in 1958 was more than three times the 1930-1939 average. In the last ten years this rise in efficiency was about 80 percent, a growth rate of 6 percent a year, or three times the increase in American industrial output per man-hour in the same period. With the increasing capitalization of farm operations, paid inputs expanded by two-thirds, and unpaid inputs (such as home-grown seed and fodder or feedstuffs for draft animals and livestock) declined by one-third of the average in 1930-1939.

Price Trends Important

One of the results of the rapid commercialization of agriculture has been to make farmers newly sensitive to the costs of goods and services they buy, in relation to the prices their own commodities sell for in the markets. Nothing more clearly illustrates the new condition than the fact that the risks of the market have become more serious to the commercial farmer than the risks of the weather; he watches price trends more anxiously than the barometer. The effect of this can be read between the lines of the current Agriculture Appropriations Bill. The amount directly budgeted by Congressman Whitten's Subcommittee on Agricultural Appropriations for price insurance ("stabilization") was $3,000,000,000 and the line budget item for federal crop insurance was $6,300,000, that is, about one five-thousandth part of the former.

Yet federal money is still spent on agriculture as if the industry were seriously ailing. Last year the total net farm income of all farmers, from farm operations, was $11 billion. At the same time the federal expenditure on agriculture was about $6 billion. Which means that it cost the people of the United States more than 55 cents to enable our farmers to earn a dollar — more, since in this computation no allowance has been made for state expenditures in behalf of farming. The mayors of our big cities complain annually at their national conference (and did this year again) that farmer-dominated legislatures divert disproportionate shares of state tax funds.

Farm leaders concede that all this is true — the arithmetic is clear be-

yond any question. Their response generally is to point out that farm incomes per capita are somewhat less than half of the national income per capita — i.e., city folks earn twice as much, so they ought not to complain.

Among the statistics of agriculture, that particular one — the average farmer income — is beyond doubt the most misleading. Averages which lump all farmers together — the one-mule cotton and tobacco croppers of the Southeast, the 300-acre corn and hog farmers of the Midwest, the wheat men of the Great Plains holding upward of 2,500 acres, and the horn-of-plenty operators in the irrigated lands of Texas and California — are worse than useless — such figures are in fact fraudulent.

Big Farmer Benefits

The benefits of price stabilization, whether in the form of commodity loans or marketing orders, relate directly to the number of bushels, tons, bales, or pounds a farmer grows — and so are most helpful to the large commercial farmers. In the same way, it is the commercial farmer who

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HELPFUL BOOKLETS ..... p. 26

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Sell all your whole milk at a profit! With Instant Super Calf-Kit you can have your calves completely weaned and on dry feed in six weeks for less than $5 per calf. And they will be well on the way to becoming superior milk producing machines.

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stands to benefit most by agricultural research and education, market reporting and trend forecasting services, the grading and food inspection services.

The bias in favor of business farming is repeated in all fifty of the state departments of agriculture. These departments are run by professional agronomists for the benefit of commercial farmers. Farmers who grew less than commercial quantities of produce have, in the like proportion, less need for the services of these agencies; or to put it another way, it's an open secret in farm circles that the smaller the farm, generally speaking, the more poorly it is managed: the operator does not have the means to make use of good advice.

Favors Marginal Farmer

The only substantial USDA program with a built-in bias favoring the low-income or marginal farmer is the "soil bank", or Conservation Reserve. This device for taking surplus land out of production has been in operation since 1956, and at the present time about 5 percent of U. S. cropland is under Conservation Reserve contracts which stipulate that it is to lie fallow — hence the word "conservation" in the title of the program. From ancient times until the development of soil science, fallowing was thought to be the only method, or more recently the essential method, for fertilizing land under cultivation.

Nothing But Hokum

Now we know that the notion is utter hokum. Researchers have shown that the Chinese, for instance, cropped their lands continuously for thousands of years without ever giving their fertile soils any "rest" and one can travel through the length and breadth of rural America without ever finding — except in the Great Plains area, — any farmers who practice biennial or triennial fallowing as once done.

Since Conservation Reserve contracts are long-term contracts, the "conservation" actually means the direct opposite of what it signifies in the ACP program described above; under such contracts, the farmer is paid to leave land uncultivated, but to plant grass or trees on it so that the rains won't wash the naked soil away. The average payment for planting such protective cover in the first year is about $12 per acre per year for three to ten years. Commercial farmers have been putting their poorer acres into this Reserve, while lavishing extra care on their better lands. The consequence has been little reduction, in many areas, in the amount of crops produced for the surplus stockpile.

The present administration, in a feeble opposition to this mad business, has offered special incentives for *whole-farm* placements in the Reserve.

Hurts Farm Business

Today about two-thirds of all the cropland in the Reserve consists of whole-farm units, whose owners have resigned from agriculture with a pension, so to speak, but can continue to live on the place, commute to a job in town, use the permanent pasture and orchard land, and maintain a home garden.

Recent plans to double the acreage impounded by this operation and to extend it through the next decade have withered because of the opposition of small-town feed, fertilizer, implement, and hardware dealers. The commercial farmer and small-town businessmen often operate as a political team; they work hand in glove to uphold their mutual interests against the overwhelming majority of the people who live in the larger towns and cities. Under the sacred symbols of the family farm and the small enterprise, this team has developed and maintained, over the past twenty-five years, a system of subsidies, bounties, licensed monopolies, and other privileges without parallel, in proportion to their incomes, in the long history of economic intervention in the United States.

Farm and Complain

In sum, we see here the agricultural problem: how decent, average, hard-working, right-thinking country people can claim they must be kept in business with public assistance when they could comfortably retire, or, if they must work, could turn to some other form of enterprise that normally and directly pays profits as well as wages to the proprietors.

But instead, they have chosen to farm — and complain. Some sections of the farm economy — especially wheat — have been so corrupted by subsidies that they would collapse if supports were withdrawn. Whole states in the Great Plains area, both the Dakotas, Montana, Nebraska, Kansas, are kept afloat in the expectation of an uninterrupted flow of U. S. Treasury paper — CCC checks, conservation payments, soil bank remittances, and so on.

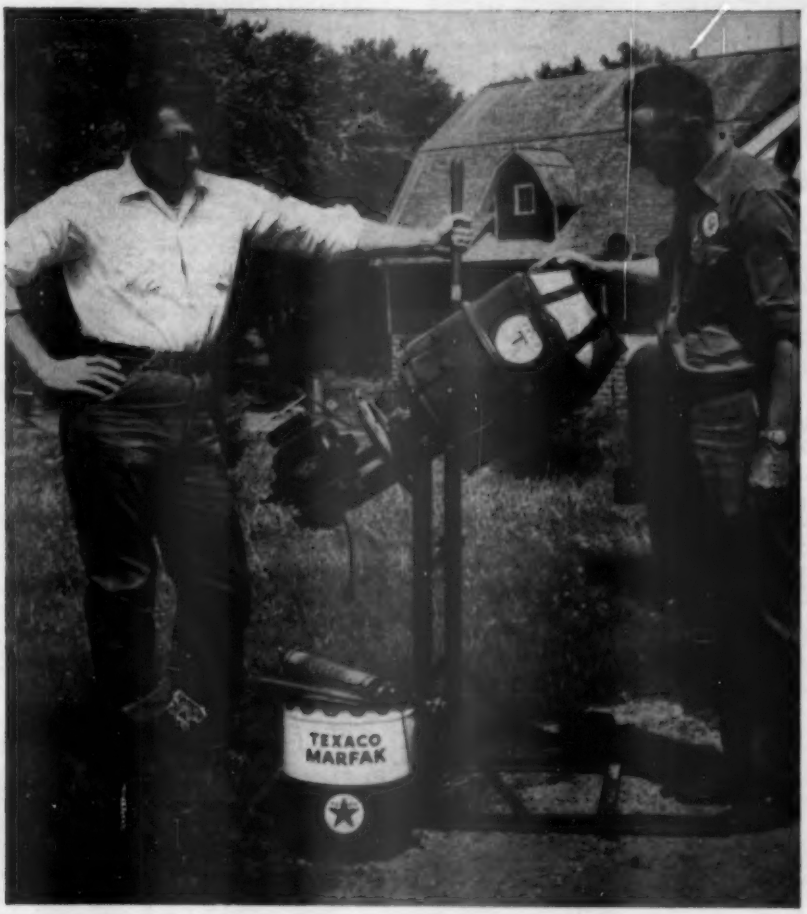
How much the U. S. Department of Agriculture will have to "lend" to farmers in any one year is unpredictable. The price-support laws specify that all basic crops grown on licensed or "allotted" acreage shall be acceptable for collateral for federal loans at fixed valuations per bushel or per pound. How much farmers may offer, and how much the Department must have on hand to pay out to them in loans, depends on unpredictable weather and market conditions. An unusually good harvest (as in 1958) or large carry-over stocks from previous years could depress the market so seriously that unanticipated quantities of qualified crops are offered for federal loans — and abandoned in the government's possession. This has resulted, repeatedly, in the diminution of the Department's lending capacity. In such cases, the Department is authorized to borrow directly from the Treasury; and the "capital impairment" is made up in the next appropriation bill. This is a unique privilege possessed by no other department of the federal government nor, in all probability, by any of the state, municipal, or county governments or agencies throughout the United States.

Does This Make Sense?

At the present time the total of direct USDA loans to farmers or to agencies performing services for farmers, exclusive of loans guaranteed by the Department, is $17 billion. The Department's interest charges are invariably lower than those of any other lender, and the collateral it will accept is often of dubious value. To take one instance, the Commodity Credit Corporation, the price-support subsidiary of the Department, has a lending authority of $14.5 billion and an inventory of forfeited collateral for which $7.2 billion was paid. The carrying charges (interest, transportation, and storage costs only) on this and $2 billion of additional price-support loans not yet in default, are $1.25 billion annually, or $3.5 million every day.

Does all this make sense when the national welfare requires that we spend all we can spare on so many other important needs? End.

FARM-MADE CEMENT MIXER SAVES TIME & HARD WORK



Lloyd Stauffer, whose farm is near Greene, Iowa, needed a very small cement mixer for pointing up concrete around the barn. So, he built the one shown here. His materials consisted of an old Texaco Universal Gear Lubricant drum, pipe and angle iron for the frame, and bearings from a junk pile. Aside from the ¼-horsepower motor, the whole job cost less than $5.

To lubricate their cement mixer and other equipment, Lloyd (left), and his father, Vic, use Texaco Products supplied by Texaco Distributor Darrell Davis (right). These progressive farmers prefer Marfak lubricant. They know that Marfak forms a tough collar around open bearings. It won't drip out, wash out, dry out or cake up.

The motorized field equipment used by this father-and-son combination includes two tractors and a truck. The Stauffers have used Texaco Products for more than five years. They know *it pays to farm with Texaco Products.*

FIRE CHIEF FOR HIM!

H. Lee Cherry (right) farms 350 acres in the rich tobacco area near Washington, North Carolina. Here he is getting a delivery of Texaco Fire Chief gasoline from Texaco Distributor H. G. Winfield. Lee prefers Fire Chief because it delivers superior fire-power and draw-bar pull for low-cost operation. The reason is that economical Fire Chief is Climate-Controlled for altitude and seasonal temperatures. He, too, knows that *it pays to farm with Texaco Products.*

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EDITORIAL

by Frank Waddle

Government Programs For Agriculture

As we went to press, President-elect Kennedy and his new Secretary of Agriculture, Governor Orville Freeman, were busy caucusing with farm leaders as they shore up plans for agricultural legislation during the current session of Congress.

Their goal is to increase farm incomes. Our latest report (See Washington News, p. 8) is that a new land retirement program will be used to bring this about. Maybe they will be successful, maybe they won't.

But even if they are — what about four years from now — or eight. How long will a city-dominated Congress vote money for farmers? Some Congressmen are already getting mighty reluctant to vote for agricultural appropriations (see Harvests of Insanity, p. 24). No doubt this situation will continue to grow more unfavorable for the farmer.

The tragic thing about the efforts of government to help the farmer is that it keeps the farmer from helping himself. Currently, things are about bad enough in agriculture for farmers to become interested in getting together to work out some solution to their problem on their own. They will have to do this sooner or later. The present interest in farmer affairs by Uncle Sam merely postpones the inevitable.

Adjustments Must Come

I would have a lot more sympathy for government programs for agriculture if they included more provisions for adjustments which must be made in agriculture before it can cease to be a ward of the government. We must allow the efficient farmer to prosper and the "others" to get out of farming. Trouble is, most political efforts must be formulated to fit all farmers — the successful commercial farmer and the backward "hay-pitcher" who isn't really a farmer but a welfare case.

The effect of such legislation is to stabilize and perpetuate the present situation in agriculture. Needed adjustments are hampered. How much better it would be if we went ahead and made these adjustments now rather than waiting another four years and hoping for more help from the government.

As former Secretary of Agriculture Claude Wickard told a group of Iowa farmers, "It's much better to whack off a dog's tail in one clean slice than to cut it off with several dozen half-hearted efforts."

One thing's sure — the dog's tail has to come off! And farmers expect the government to do the job. They expect this because politicians continue to promise to solve their problems for them.

What Farmers Think

I recently talked with farmers in a low-income area of one of our Southern states. Here's a typical account: "Oh, things are terrible here. Look around at all the land that is going out of cotton. The government has got to do something. Just last week another one of my neighbors had to get a job in town. We just can't make it unless the government does something for us. What is this new Democratic administration going to do for the farmer?"

"I'm a leader in one field of farming—for years now I've pioneered the 15-hour work week."

Help Will Not Come

What this farmer didn't realize is that neither the government, nor anybody else, can do anything to make his hillside 60-acre farm bring in enough money to buy the things his family wants. It could have done this a few years ago — when his family didn't "want" so many things.

So he continues to live in "hope" of help from the government. Even admitting that his neighbors who now work in town make more money than they ever made on the farm, he still cannot see the futility of his situation. Continuous talk that politicians are going to make farming prosperous makes this man expect "too much" for he considers himself the farmer they are going to help.

In this same area I talked to an automobile dealer who was getting ready to close his doors. Strangely enough, he never mentioned getting any help from the government. He had no reason to expect any. Politicians hadn't promised to do anything for him. So he was working out his own problems. But I'm sure his situation was just as serious to him and his family as the case of the farmer I talked with that same day.

The point is, farmers are never going to work out their own problems as long as politicians promise to do it for them. We'll continue to go along with too many farmers, an unorganized farm economy, and general dissatisfaction among farmers as long as the government devises new plans and farmers find ways to make them ineffective.

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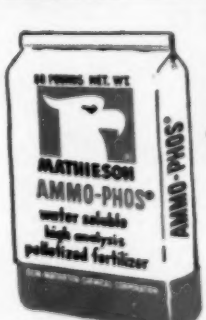

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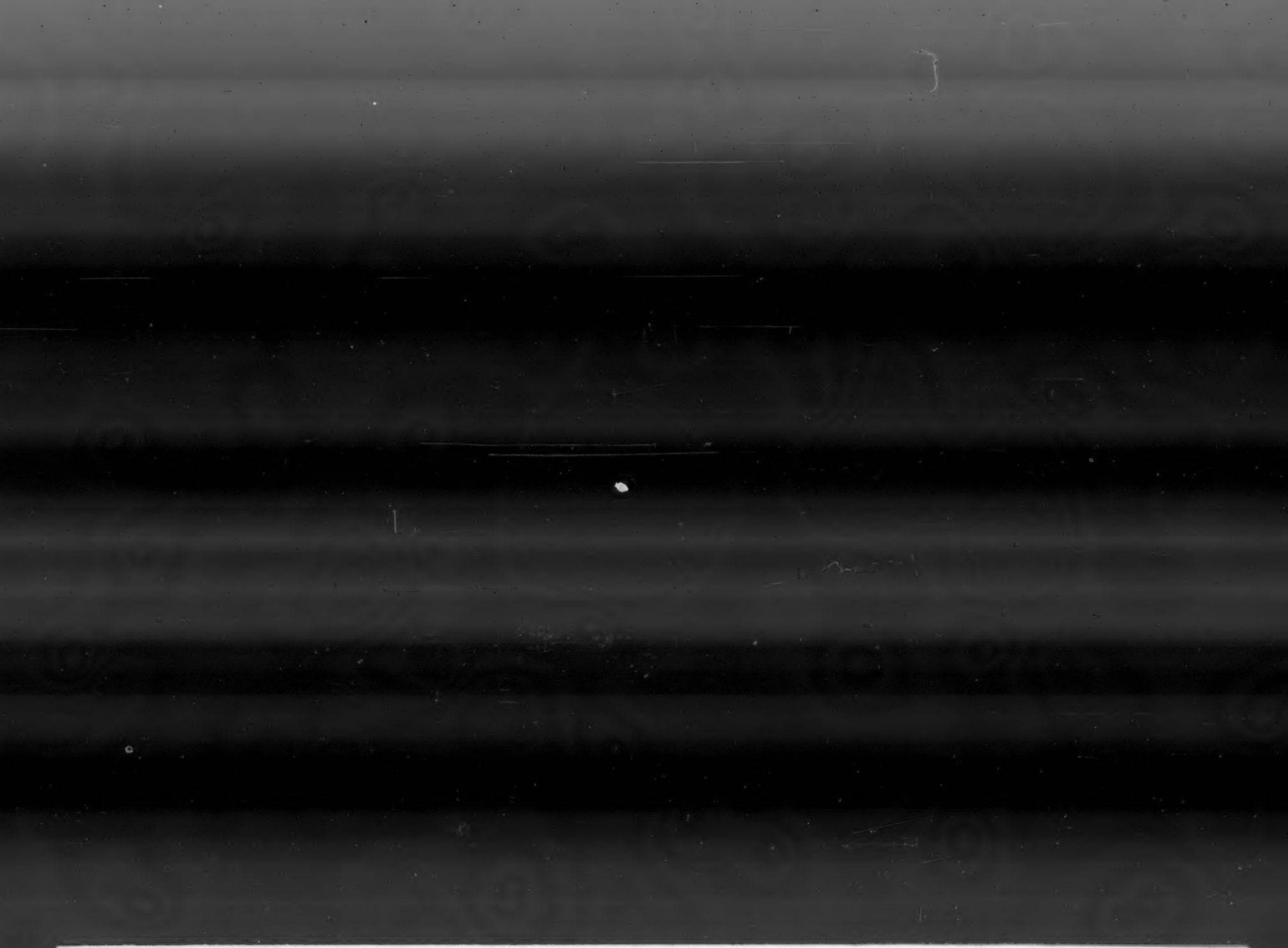
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